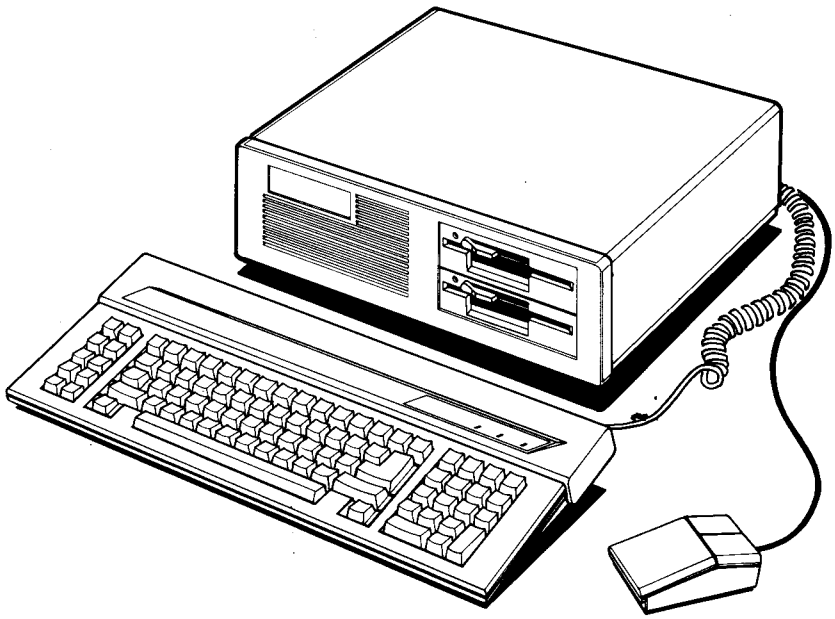
ATARI®

PC2™



Owner's Manual

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INTRODUCTION

Welcome to the Atari PC2

If you are new to the world of personal computers, you'll discover that the Atari PC2 is a powerful, reliable system that's easy to set up and operate. And if you're a seasoned PC user, you'll appreciate the many features built into the Atari PC2--features you'd have to add on to other systems--including:

* A high-speed 8088 processor so you can choose between standard PC and turbo operating speeds.

* 512 kilobytes of RAM with expansion capability to 640 kilobytes.

* An Enhanced Graphics Adaptor (EGA) video subsystem for superior screen resolution and color selection.

* Support for an optional numeric data processor to speed calculations.

* Room for two internal drives.

* Interfaces for both serial and parallel peripherals.

* A monitor port that supports EGA, color, and monochrome monitors.

* An IBM PC AT-layout keyboard.

* Four slots for XT-style expansion boards.

* A mouse for controlling GEM Desktop and other utilities and applications.

Note: Standard options on the Atari PC2 vary. Your model may have either one internal floppy drive, two internal floppy drives, or one internal floppy and one internal hard drive.

The **Atari PC Information Sheet** included with the system gives a complete list of all hardware, software, and documentation supplied with your Atari PC.

Using This Manual

To get top performance from your Atari PC, you'll want to set up and operate it correctly from the start. This manual explains how to do that in clear, nontechnical language that PC novices as well as computer experts can understand. Once you're accustomed to using your Atari PC, this manual can serve as a reference guide to individual procedures and specific information.

It is essential that you make backup copies of the disks supplied with your Atari PC. Backup copies safeguard you from accidentally losing or damaging the information on the original disks. Once you've made the copies, use them as your working disks and safely store the originals. For instructions on copying disks, see **Copying the Program Disks** in **Chapter 2** of this manual.

Read the manual chapters in sequence the first time through, letting them guide you through connecting your system to a thorough explanation of system operation. Atari PC owners in the United Kingdom can refer to **Appendix F** for additional instructions when connecting their systems.

A summary of each manual section follows:

Chapter 1: Getting Started describes the Atari PC2 components and explains how to install and switch on the system.

Chapter 2: Atari PC2 System Overview takes a look at how your PC system works and explains how to use MS-DOS, the PC's operating system. You'll also find helpful information on system features, working with disks, and making backup copies of the program disks.

Chapter 3: Introduction to MS-DOS Commands explains how to use MS-DOS commands and provides a reference for often-used commands. The last section of the chapter explains common error messages you may see while working with your system.

Appendix A: System Maintenance explains how to identify and correct common operating problems and take care of your system.

Appendix B: Installing Extra RAM and the Numeric Data Processor explains how to install those optional features.

Appendix C: Installing Expansion Boards and Internal Drives explains how to install optional functional boards and internal drives inside the PC.

Appendix D: Atari PC2 Specifications summarizes the major features and requirements of the system.

Appendix E: Atari PC2 Connector Pinouts shows the pin assignments of the Atari PC2's peripheral ports.

Appendix F: Power Connection in the United Kingdom includes additional set-up instructions for Atari PC2 owners in the United Kingdom.

The **Glossary** defines common technical terms used in this manual.

Customer Support tells you where to find more information about the Atari PC2 and all Atari computer products.

In this manual, characters in dark type enclosed by square brackets ([ ]) represent keys on your Atari PC keyboard. In cases where a process or function requires using two or three keys, the keys are listed together in order. For example, **[Ctrl] [S]** means to hold down the **[Ctrl]** key while pressing the **[S]** key; **[Ctrl] [Alt] [Del]** means to hold down the **[Ctrl]** and **[Alt]** keys while pressing the **[Del]** key.

CHAPTER 1
GETTING STARTED

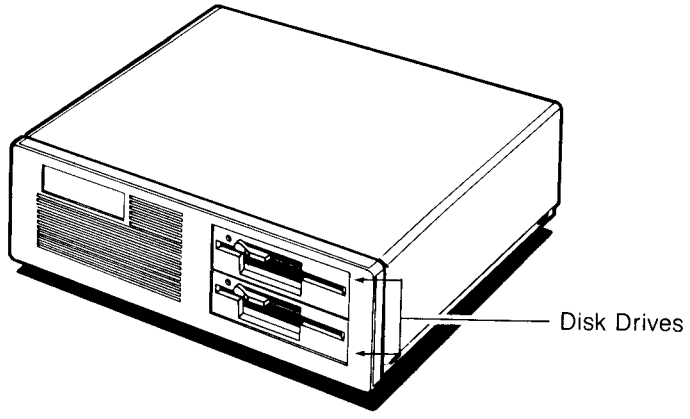
Your Atari PC computer system should be set up in a roomy workspace that's both healthy for the system and enjoyable for you. When setting up your system, choose a location that has a sturdy, level surface close to an electrical outlet. There should be plenty of room for airflow around the components. Don't set up your system where it will be exposed to dust, grease, extreme temperatures, direct sunlight, or high humidity. An environment that works well for a television or stereo system should suit your Atari PC just fine.

Carefully unpack the PC components, placing them in the workspace you've selected. Remove all packing materials (including the protective inserts in the floppy disk drives) and save them for storing or shipping your PC system later.

Atari PC2 System Components

COMPUTER AND DISK DRIVE

The Atari PC computer holds the motherboard (main system board), power supply, and microchips that make computer operations possible. It also contains expansion slots and one or more disk drives. Expansion slots accommodate additional circuit boards that expand the PC's capabilities. Disk drives let you store and retrieve information with your computer.



KEYBOARD, MONITOR, AND MOUSE

The Atari PC keyboard and monitor are the tools you and the computer use to communicate. You use the keyboard to give data and instructions to the PC. The monitor provides a visual display of your keyboard input and the PC's computing processes as they happen. You can attach a monochrome, color, or EGA (Enhanced Graphics Adapter) monitor to your Atari PC2.

The mouse attaches to the computer and is used to operate the PC from GEM Desktop and certain applications programs. You use the mouse by rolling it on a flat surface and pressing the mouse buttons.

NUMERIC DATA PROCESSOR AND RAM CHIPS

Inside your Atari PC2 are provisions for an optional numeric data processor (Intel 8087 chip) and additional RAM (for a system total of 640 kilobytes). See **Appendix B** for complete installation instructions.

OPTIONAL DEVICES

You can add almost any option designed for an IBM PC XT computer or compatible to your Atari PC2. Adding options lets you expand the functionality of the Atari PC2 and customize it to suit your needs.

Expansion Boards

Inside your Atari PC2 are four slots that accommodate PC XT or compatible expansion boards. You can add hard disk controller, network, modem, or other boards in these slots.

Drives

The Atari PC2 has two internal drive bays. You can install floppy and hard disk drives as well as any other PC XT-compatible drive, such as a tape drive or removable data cartridge drive.

You can add or swap internal drives to set up the drive configuration you want (one of the drives will normally be a floppy drive). The floppy drive controller inside the Atari PC2 can be connected to two drives (floppy disk, tape, or other drives that use a floppy disk controller).

See **Appendix C** for general instructions on installing expansion boards and internal drives in the Atari PC2. See the manual supplied with the option for specific installation and operating instructions.

Parallel and Serial Devices

Your Atari PC2 has parallel and serial ports on the back panel. Typically a printer is connected to the parallel port and a modem to the serial port. You can connect devices to these ports without changing or adding anything to the inside of your computer.

Connecting the PC2 System

Setting up your system is done in the following order:

1. Installing options such as extra RAM chips, numeric data processor, expansion boards, and internal drives.

2. Connecting the power cable.

3. Checking the monitor switches.

4. Connecting the monitor.

5. Setting the voltage select switch.

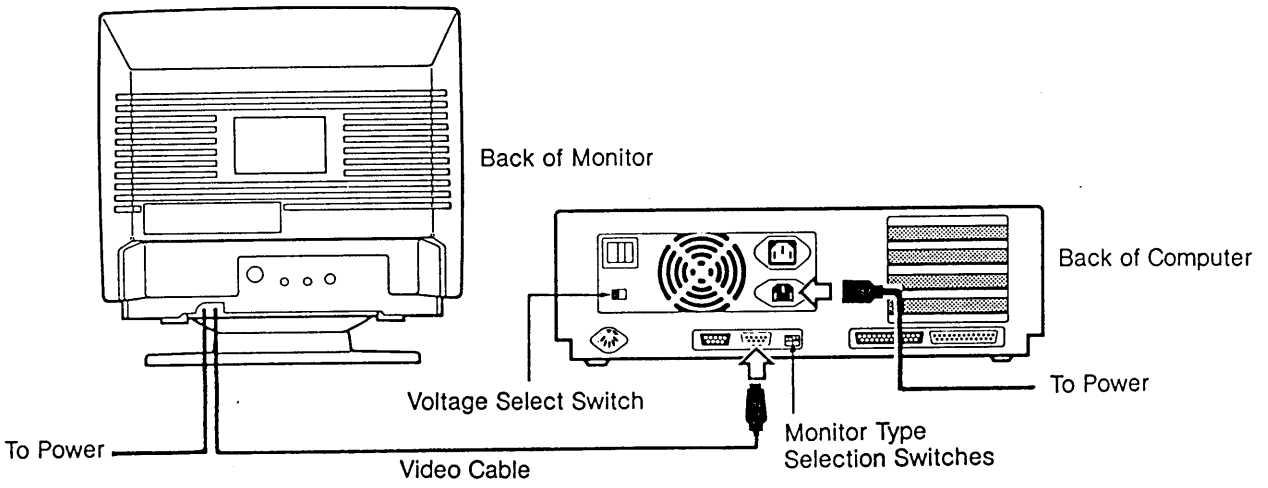
6. Connecting the keyboard and mouse.

Remove the protective inserts from all floppy disk drives and make sure the computer is turned off (the power switch is on the back). Then follow these steps to set up your system.

1. If you are installing optional RAM, a numeric data processor, expansion boards or internal drives, do so now. For instructions on installing RAM and the numeric data processor, see **Appendix B**. For instructions on installing expansion boards and internal drives, see **Appendix C**.

AMENDMENT PLEASE NOTE

2. Plug the power cable into the power jack on the back of the computer, then plug the cable into a grounded electrical outlet.



3. Set the monitor type selection switches (labeled "Config") on the computer's back panel for your monitor type. You must do this before you connect the monitor. Follow the table below. The up position is OFF the down position is ON

Monitor Switches	Switch 4	Switch 3	Switch 2	Switch 1
EGA (SMART ON)	OFF	OFF	ON	OFF
EGA (SMART OFF)	OFF	ON	ON	OFF
Color	ON	OFF	OFF	ON
Monochrome	ON	ON	OFF	ON

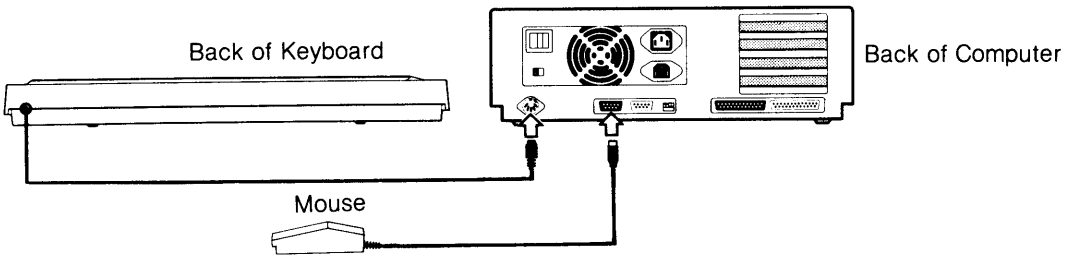
If you have installed a monochrome display adapter card, the switches should be set to SMART OFF. The HGC, MDA, and HCOLOR utilities then become meaningless.

Warning: To prevent damage to your monitor, you MUST set the switches correctly for your monitor type BEFORE you connect the monitor and switch on the system.

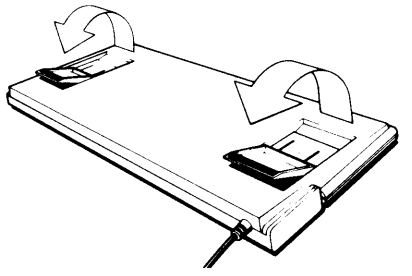
4. Set the monitor on top of or beside the computer. Plug the monitor's video cable into the jack labeled "Video" on the back of the computer. Make sure the monitor is turned off, then connect its power cable to the monitor, then to a grounded electrical outlet. See the manual supplied with your monitor for further information.

5. Check the voltage select switch on the back of the computer. Make sure it is set for the voltage used in your country.

6. Connect the keyboard by plugging its cable into the jack labeled "Keyboard" on the back of the computer. Connect the mouse by plugging its cable into the mouse port on the back of the computer.



Adjustable legs on the bottom of the keyboard let you slant the keyboard to a comfortable typing position. To raise the keyboard (for instance, when it's placed on a low tabletop), swing the legs out to the raised position. Push the legs back into their original position to lower the keyboard.



Switching the PC2 System On and Off

SWITCHING ON THE SYSTEM

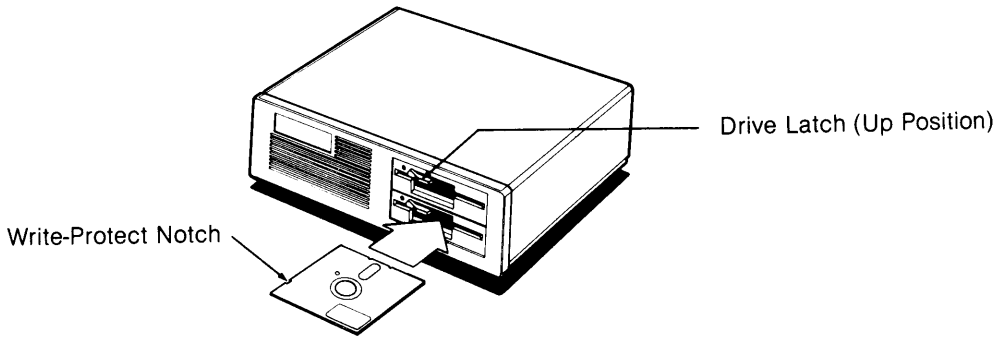
Use MS-DOS Disk 1 (supplied with your Atari PC2) when you switch on your system. This disk contains information your computer needs in order to initialize.

Note: It's essential that you make backup copies of the disks supplied with your Atari PC2. Always use the backup copies as your working disks and store the originals for safekeeping. For instructions, see **Copying the Program Disks** in **Chapter 2.**

To switch on your PC system, follow these steps:

1. Switch on your monitor and any other peripherals you've connected. Then switch on your computer (always switch on the computer last). The computer's power indicator light comes on.

2. Make sure the drive latch is flipped up. Hold MS-DOS Disk 1 label side up with the write-protect notch on the left. Gently slide the disk into the drive opening until it's completely inside the drive. Flip the drive latch down, locking the disk in place.



3. The computer begins retrieving data from the disk. When the computer is finished, the operating system MS-DOS prompts you for the date on the monitor screen.

```
Current date is Tue  1-01-1980
Enter new date  (mm-dd-yy):
```

Note: If the date prompt doesn't appear, check that your monitor is switched on with the brightness properly adjusted, and that MS-DOS Disk 1 is correctly inserted with the drive latch flipped down. If you still don't see a date prompt, switch off the system and make sure all cable connections are correct and secure. If the problem continues when you switch on the system, see **Appendix A**.

4. Press the **[Enter]** key. MS-DOS responds by prompting you for the time:

```
Current time is 0:01:15:24
Enter new time:
```

5. Enter the hour and minutes (and seconds, if you like), separating them with colons (:). MS-DOS uses a 24-hour clock, so add 12 to any PM hour. For example, if the time is 3:20 PM, type 15:20:00.

6. Press the **[Enter]** key. Your screen will display something like this:

```
Current date is Tue 1-01-1980
Enter new date (mm-dd-yy): 3-30-88
Current time is 0:01:15:40
Enter new time: 15:20:00

Microsoft® MS-DOS™ Version 3.2
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A>
```

Note: MS-DOS adds the date and time to all files you create or modify to help you identify the most up-to-date versions of your files.

The A> prompt at the bottom of the display is the MS-DOS system prompt. The A means that drive A is currently in use (accessed). Next to the prompt is a blinking bar called the cursor. The system prompt and the cursor tell you that MS-DOS and the PC are ready to receive instructions. The line containing the prompt is called the MS-DOS command line.

When you switch on your Atari PC, it is automatically set to turbo mode if you haven't installed the optional numeric data processor (8087 chip). When turbo mode is on, the turbo indicator light on your computer is lit. If you have installed the numeric data processor, the Atari PC defaults to standard PC mode when you switch it on. If your 8087 chip is rated at 5 MHz, you must stay in PC mode. If your 8087 chip is capable of operating at 8 MHz or faster (8087-2 or 8087-1) you can enable turbo mode after switching on your Atari PC. (For more information, see **Changing System Speeds** in **Chapter 2**.)

Note: **Chapters 2** and **3** and the **MS-DOS User's Reference** tell you how to work with MS-DOS and your Atari PC2.

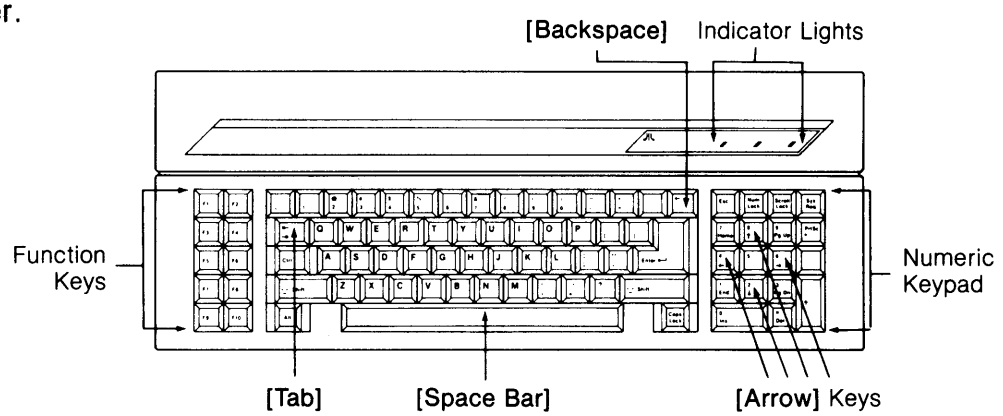
SWITCHING OFF THE SYSTEM

Remove the disk from your drive (or drives), then switch off your computer first, then your monitor and any peripherals. Wait at least ten seconds before switching your computer system back on. Switching the computer on with the on/off switch is called a coldstart, and it completely initializes the computer.

Ports and Features

KEYBOARD

The Atari PC's keyboard is like a typewriter keyboard in both design and function. In addition, extra keys on the PC's keyboard perform special functions not found in a typewriter.



Along the left side of the keyboard are the function keys **[F1]** through **[F10]**. These keys perform varying functions depending on your applications program. The **[F1]** through **[F6]** keys are also used to edit the MS-DOS command line. (See the **MS-DOS User's Reference** for details.)

The alphanumeric keys (letters, numbers, and symbols) are primarily used to enter data and commands. They usually function just like similar keys on a typewriter. The **[Shift]**, **[Tab]**, **[Backspace]**, and **[Caps Lock]** keys also perform the same functions as their typewriter counterparts. Most alphanumeric keys automatically repeat when they are held down.

Certain keys have special control functions. These keys are **[Alt]**, **[Ctrl]**, **[Del]**, **[End]**, **[Esc]**, **[Home]**, **[Ins]**, **[Num Lock]**, **[Pg Dn]**, **[Pg Up]**, **[PrtSc]**, and **[Scroll Lock]**. Although the functions of these keys can vary depending on your application, the following key combinations (keys pressed simultaneously) will usually be in effect:

[Ctrl] [S]	Stops the screen display from scrolling. Press **[Ctrl] [S]** again to resume scrolling.
[Ctrl] [Num Lock]	Pauses the current program or command. Press any key to continue.
[Ctrl] [Scroll Lock]	Pauses the current program or command and returns you to the MS-DOS command line.
[Ctrl] [Alt] [Del]	Restarts your system.
[Ctrl] [Alt] [keypad +]	Turns on turbo mode, setting the system to high speed.
[Ctrl] [Alt] [keypad -]	Turns off turbo mode, returning the system to normal PC computing speed.
[Ctrl] [Alt] [<]	Turns on audible key click.
[Ctrl] [Alt] [>]	Turns off audible key click.

When a printer is connected to your system you can also use these key combinations:

[Shift] [PrtSc]	Prints the screen display.
[Ctrl] [PrtSc]	Prints what you type as you type it. Also prints the screen output (the PC's screen response to your instructions). Press **[Ctrl] [PrtSc]** again to stop printing.

The four **[arrow]** keys are generally used within an applications program to move the cursor in the direction of their arrow (up, down, left, or right). The cursor is a movable symbol on screen that marks where the next action will take place.

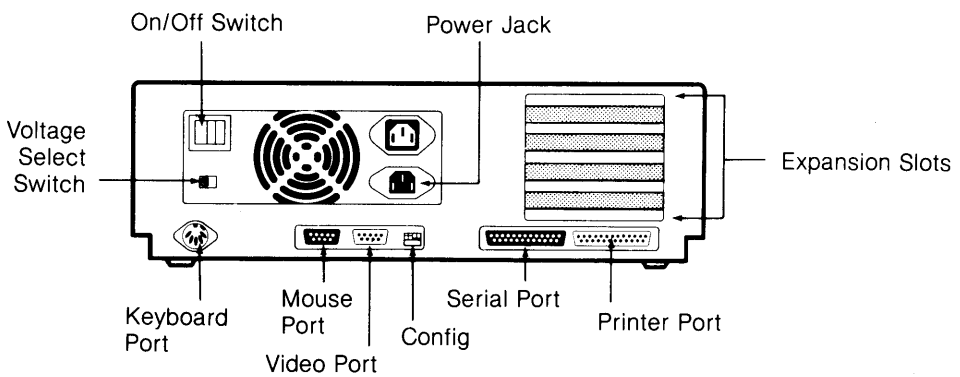
The numeric keypad provides a means for entering numbers and math symbols, calculator-style. Pressing the **[Num Lock]** key once activates the numeric keys for arithmetic entry. Pressing the **[Num Lock]** key again lets you use the keys for the symbols as marked, as well as for specific functions depending on the applications program you're using. When the **[Num Lock]** key is pressed for arithmetic entry, its indicator light will be lit.

Indicator lights for **[Num Lock]**, **[Scroll Lock]**, and **[Caps Lock]**, when lit, tell you that those functions are activated.

Note: The **[Sys Req]** key normally has no function.

THE COMPUTER'S BACK PANEL

External devices (peripherals) can be connected to your computer at the back panel.



Be sure to switch off the power to both the peripheral and the computer before connecting them. Some peripheral cables have small retaining screws or clips on the sides of the connector. When the cable is in place on the computer, tightening the screws or attaching the clips maintains a strong connection and helps eliminate interference which might affect television or radio reception in the area.

Warning: Never touch the exposed contacts on any port. Static electricity could harm the sensitive electronics inside the Atari PC.

On/Off

The on/off switch turns the computer on and off.

Power

The power jack connects the computer to a grounded power source.

Keyboard

The keyboard connects to the computer through the keyboard jack.

Mouse

The mouse connects to the computer through the mouse port.

Video

A monochrome, color, or EGA monitor attaches to your computer through the video jack.

Config

These switches select a monochrome, color, or EGA monitor. (Factory setting is for EGA.)

Serial

A modem or other serial device attaches to the computer through the serial port. Refer to the manual supplied with your serial device for installation instructions.

Printer

A parallel printer connects to your computer through the printer port. The printer port is an industry-standard parallel interface, so almost any parallel device can be attached here. Refer to the manual supplied with your peripheral for installation instructions.

Expansion Slots

Expansion board connectors are accessed through these slots.

CHAPTER 2
ATARI PC2 SYSTEM OVERVIEW

MS-DOS

MS-DOS (Microsoft Disk Operating System) is the operating system for the Atari PC, and is contained on MS-DOS Disks 1 and 2 supplied with your computer.

MS-DOS consists of a group of programs that manage all computer processes such as running programs, creating files, and printing documents. You control MS-DOS by entering commands on the MS-DOS command line next to the MS-DOS prompt. (Controlling MS-DOS with commands is fully explained in **Chapter 3** and in the **MS-DOS User's Reference**.)

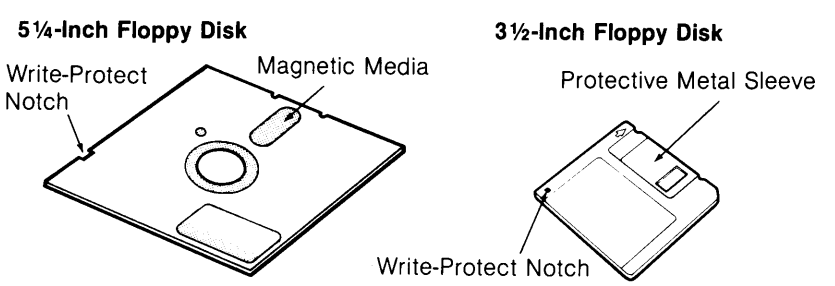
One-Drive and Multi-Drive Systems

Your Atari PC has at least one internal floppy disk drive that uses 5 ¼-inch floppy disks. To streamline data storage and retrieval, you can also connect additional floppy disk drives that use either 5 ¼-inch or 3 ½-inch disks. In addition, you can install a hard disk drive (see **Preparing a Hard Disk** in **Chapter 3** and documentation supplied with the hard disk).

In systems limited to one drive, that drive acts as both drive A and drive B. This allows for operations that use two disks, such as copying a file from one disk to another. During such operations, the disks themselves are referred to as disk A and disk B, and MS-DOS prompts you when to switch disks in the drive in order to proceed.

Floppy Disks

Floppy disks serve as permanent storage for programs and other data. These disks have a stiff protective covering holding a circular sheet of oxide-coated material. The material is the magnetic media, which holds data and is read by the disk drive. (On 3 ½-inch disks, the magnetic media is also protected by a sliding metal sleeve.) Most floppies have a write-protect notch.



Warning: DO NOT touch the magnetic media. Doing so may damage your disk and the information on it.

Floppy disks for the Atari PC are usually double-sided, meaning that both sides of the magnetic media are certified as safe for storing information. A double-sided 5 ¼-inch disk has a memory capacity of 360 kilobytes. A double-sided 3 ½-inch disk has a memory capacity of 720 kilobytes.

You must format a new blank disk before you can use it. Formatting prepares a disk to receive information by completely erasing the disk, checking for damage on the magnetic media, and setting patterns (sectors and tracks) in place to hold the information you will eventually write to the disk. Since the patterns and tracks take up some disk space, a blank, formatted disk will have slightly less memory available than a new unformatted disk. (For instructions on how to format, see **FORMAT** in **Chapter 3**.)

To insert a 5 ¼-inch disk into the drive, first make sure the drive latch is flipped up. Hold the disk label side up, with the write-protect notch on the left. Gently slide the disk into the drive opening until it is completely inside the drive. (If the disk meets resistance, check to see if another disk is already in the drive.) Flip the drive latch down to lock the disk in place.

To remove the disk, flip the drive latch up and gently pull out the disk.

To insert or remove a 3 ½-inch disk, follow the instructions supplied with the drive.

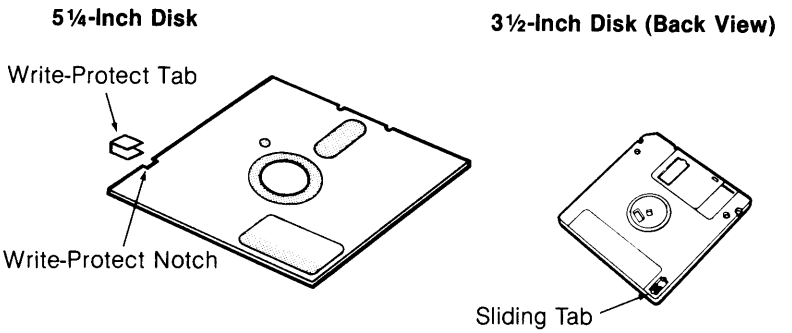
Warning: To avoid damaging your disks, make sure the drive's busy light is off before you insert or remove a disk.

WRITE-PROTECTING DISKS

When you write to a disk, the drive and computer work together to put information from RAM onto the disk, where it is stored. Write-protecting a disk is a security measure you take to prevent new information from being written to the disk. This keeps you from inadvertently changing disk contents you want to preserve.

Most 5 ¼-inch disks have a write-protect notch on the left edge of the casing. To write-protect the disk, cover the notch with the write-protect tab supplied with the disk. Fold the tab over the notch to cover it on both sides of the casing. Remove the tab when you no longer want the disk to be write-protected.

Most 3 ½-inch disks have a write-protect notch in the lower left corner of their casing. On the back of the disk, the write-protectnotch has a sliding tab. To write-protect the disk, slide the tab until you can see through the notch. To remove the protection, slide the tab back so it covers the notch.



Note: Some commercial program disks do not have write-protect notches. These disks are permanently write-protected.

Copying the Program Disks

You must make backup copies of all disks supplied with your Atari PC before beginning to work with them routinely. This protects you from losing the disks or damaging their contents. After copying, store the original disks in a safe place protected from dust, grease, extreme temperatures, and sources of electric power or magnetism. Always use the copies as your working disks.

MS-DOS provides a DISKCOPY command for copying an original disk to a blank disk. If the blank disk is not formatted, DISKCOPY formats it before copying.

To copy the disks with the DISKCOPY command, follow these steps:

1. Have a blank disk ready for each disk you're going to copy. Do not write-protect the blank disks.

2. Switch on your system as described in **Chapter 1** to display the A> prompt.

3. Type

   DISKCOPY

then press **[Enter]**.

4. MS-DOS will ask you for the source disk. Leave the original MS-DOS Disk 1 in the drive and press any key.

5. Next, MS-DOS will ask for the target disk. Replace the source disk with a blank disk and press any key. You may be asked to swap the source and target disks several times.

6. When formatting and copying are complete, MS-DOS will ask if you want to copy another disk. Press **[Y]**.

7. When MS-DOS asks for the new source disk, remove the disk from drive A, replace it with the next disk you want to copy, and press any key. Then repeat steps 5, 6, and 7 until all original disks are copied.

8. When MS-DOS asks if you want to copy another disk, press **[N]**.

After removing each backup disk from the drive, immediately label it using the same name as on the original disk's label. Write on the label before affixing it to the disk, or if the label is already on the disk, write with a felt-tipped pen. (Writing on the disk with a hard-tipped pen or pencil can harm the media.) Store the original disks and always use the copies as your working disks.

The CONFIG.SYS and AUTOEXEC.BAT Files

After you switch on the computer and before MS-DOS displays the A> prompt, the system goes through a process called initialization. During initialization, MS-DOS is installed, and then it checks the system for the information it needs in order to operate.

CONFIG.SYS and AUTOEXEC.BAT are two special files you can create that tell MS-DOS how you want it to operate. MS-DOS will read these files during initialization.

Note: Newly created or modified CONFIG.SYS and AUTOEXEC.BAT files take effect after you restart the computer. To modify an existing file, use the MS-DOS EDLIN text editor (described in the **MS-DOS User's Reference**).

THE CONFIG.SYS FILE

The CONFIG.SYS file tells MS-DOS how to use certain devices. To create CONFIG.SYS, type the following at the A> prompt:

COPY CON CONFIG.SYS [Enter]
DEVICE = ANSI.SYS [Enter]
[F6] [Enter]

The first line creates and names the file. The second line enables an ANSI standard terminal emulation, required by many applications programs. The third line ends the file and allows it to be saved.

Note: CONFIG.SYS can also be used to configure the Atari PC to handle non-standard disk drives. For complete information, see the **MS-DOS User's Reference.**

THE AUTOEXEC.BAT FILE

The AUTOEXEC.BAT file tells MS-DOS what commands to automatically execute during system start-up. Having an AUTOEXEC.BAT file saves you the trouble of entering routine commands each time you begin working on your computer. To create the AUTOEXEC.BAT file, type the following at the A> prompt:

COPY CON AUTOEXEC.BAT [Enter]

This line creates and names the file. Now you can add any command to the file by typing the command on a separate line and pressing **[Enter]**. For example, the line

DIR [Enter]

displays a list of files in the current directory every time you start up your system. Other useful commands to add to the AUTOEXEC.BAT file are CHKDSK, PATH, CHDIR, and commands for executing specific applications. (For more information on these and other commands, see **Chapter 3** and the **MS-DOS User's Reference**.)

When your AUTOEXEC.BAT file contains the lines you want, press **[F6] [Enter]**. This saves the file to disk.

You can make other .BAT (batch) files to run often-used commands. To do that, create a .BAT file consisting of the sequence of commands you want to run as a group. Then run the commands by entering the first part of the filename (without the .BAT extension) at the prompt.

For example, you may find that you often print the same groups of files from different directories, each time entering separate PRINT commands for each group, like this:

```
PRINT \TABLES\*.OAK
PRINT \PAYROLL\TEMP\*.CHK
PRINT \ADS\RADIO\WKEND.TXT
```

An easier way to print the groups of files is to add the three command lines to a batch file named, for example, P.BAT. When you want to print the files, simply enter P (the filename without the .BAT extension) at the system prompt.

Note: See the **MS-DOS User's Reference** for more information on AUTOEXEC.BAT and batch files in general.

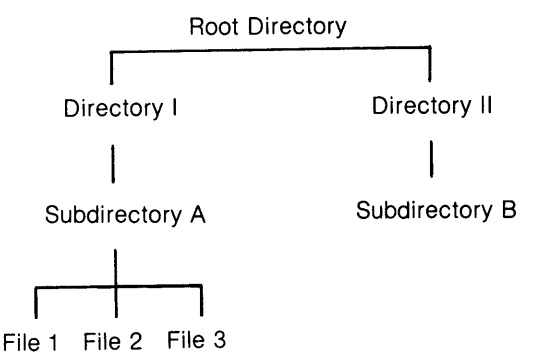
The Tree Structure of Directories and Files

Files are collections of information, such as programs or documents you create using programs. Directories are groups of files.

When you first start up your Atari PC, a root directory already exists which contains most of the MS-DOS commands. Each new directory you create is a branch of the root directory. Once a directory exists, you can create other directories within it. These are called subdirectories.

The following chart is an example of how a disk could be organized. It shows a root directory, two directories each containing a subdirectory, and three files contained in one of the subdirectories. The organization of directories and files is called a tree structure.

A Tree Structure of Directories and Files



Filenames

Files and directories are identified by their filenames. When you create a file or directory, you must name it in order to save it and to list and identify it later. Filenames are used along with commands to send instructions to MS-DOS.

A filename has two parts: the name and the extension.

SAMPLE.EXE
- extension (optional; up to three characters)
- name (mandatory; up to eight characters)

A name can have up to eight characters (letters, symbols, or numbers). An extension is optional and can have up to three characters. (Directories do not usually have extensions.) A period always divides the extension from the name. The following characters can NOT be used in a name or extension:

. " / \ [ ] : | < > + = ; , * ?

In addition, the names and extensions listed below are reserved by MS-DOS for special purposes and can only be used for those purposes:

Names		Extensions
AUX	LPT1	.APP
COM1	LPT2	.BAT
COM2	LPT3	.COM
COM3	NUL	.EXE
CON	PRN	.SYS

Names can be clues to the specific information in the file, such as TAXES for tax information, or TAXES85, TAXES86, TAXES87 for a series of tax information files. Extensions often indicate the type of a file. For example, .TXT may indicate a document file created with a word processor.

In many cases you can specify a set of filenames by using two special characters called wildcards: the asterisk (*) and the question mark (?). Wildcards are used when you want to perform the same operation, such as copying or deleting, on a group of files.

An asterisk in a filename stands for all characters and combinations of characters, and can replace an entire name or extension. For example, the wildcard designation

.

means all filenames. A filename can often have an asterisk as the name while spelling out the extension. For example,

***.DOC**

means all filenames with the .DOC extension, such as

LETTER.DOC
ATARI.DOC
MOM.DOC

but not

FRANCE.TXT

The asterisk must be the last character in the name or extension. For example,

TAX*.BAS

is valid, but

T*X.BAS

is not.

The question mark in a filename stands for all single characters. For example,

MOM?.LET

means all files that begin with MOM, have any character in the fourth position of the name, and have the extension .LET, such as

MOM1.LET
MOM4.LET
MOMZ.LET

but not

JACK.LET
MOM33.LET
MOM1.DOC

Note: Not all commands or programs can accept filenames specified with wildcards. For more information, see the **MS-DOS User's Reference** or the documentation supplied with your application.

Changing the Drive Designation

Sometimes you'll need to change the drive designation in the MS-DOS command line, depending on the drive you want to access.

If you have a one-drive system, that drive can act as both drive A and drive B. To change the drive designation, type the following at the A> prompt:

B: [Enter]

MS-DOS responds by asking you to "Insert a new disk for drive B: and strike Enter when ready." Replace the disk in drive A with the one you want to use for drive B and press **[Enter]**. The MS-DOS prompt is redisplayed as B>.

To restore drive A as the working drive, type

A: [Enter]

at the prompt.

Swap disks when MS-DOS asks you to, then press **[Enter]**. The MS-DOS prompt reappears as A>.

If you have a multi-drive system, you can access any drive on your system. At the MS-DOS prompt, type the letter of the new drive followed by a colon. Then press **[Enter]**. For example, to access drive B, type

B: [Enter]

The MS-DOS prompt is redisplayed as B>.

If you try to access a drive that doesn't exist you'll get an error message. Enter a valid drive letter to continue.

Atari PC2 Special Features

CHANGING SYSTEM SPEEDS

The Atari PC can process information in either PC mode or turbo mode. PC mode runs at 4.77 MHz; turbo mode runs at 8.0 MHz. In turbo mode, the Atari PC performs operations such as arithmetic calculation and saving and retrieving information more quickly.

When you switch on your Atari PC, it is automatically set to turbo mode if you haven't installed the optional numeric data processor (8087 chip). When turbo mode is on, the turbo indicator light on your computer is lit.

If you have installed the numeric data processor, the Atari PC defaults to standard Atari PC mode when you switch it on. If your 8087 chip is rated at 5 MHz, you must stay in Atari PC mode. If your 8087 chip is capable of operating at 8 MHz or faster (8087-2 or 8087-1) you can enable turbo mode after switching on your computer.

GEM Desktop, GEM Write, and GEM Paint (as well as many other programs) can run in turbo mode. Other programs, such as games or copy-protected software, may run only in PC mode. Some applications will require a specific mode; other applications will let you choose the mode you prefer. In those cases, you may have to experiment to find which mode works best with a particular application.

To enable turbo mode, type

TURBO ON [Enter]

or

[Ctrl] [Alt] [1]

or

[Ctrl] [Alt] [keypad +]

at the system prompt. To disable the mode, type

TURBO OFF [Enter]

or

[Ctrl] [Alt] [2]

or

[Ctrl] [Alt] [keypad -]

at the prompt.

To run turbo mode automatically when you start up your system, add

TURBO ON [Enter]

to your AUTOEXEC.BAT file.

SELECTING MONITOR DISPLAY MODES

Your Atari PC includes a built-in video display subsystem and video display commands that let you select a screen resolution and colors (display modes) according to your monitor type and software. Generally, modes with higher resolution offer fewer colors, and modes with lower resolution offer more color selections.

To set your display mode, first determine what monitor type (color, monochrome, or enhanced display) you have connected to your system. Then refer to **Monitor Display Mode Commands** in **Chapter 3** for information on display modes allowed by each monitor type and the screen resolution and colors available with each mode.

When selecting software to run on your Atari PC, check whether the program can be operated in a display mode available to you. For example, some programs can operate in EGA mode only, so you won't be able to use them with a monochrome monitor.

Note: The Atari PCM124 monitor is an enhanced display (EGA) monitor that you can use with all display modes.

SETTING THE KEY CLICK FEATURE

The Atari PC's key click feature provides an audible response (key click) as you type. To turn on the feature, type

CLICK ON [Enter]

or

[Ctrl] [Alt] [<]

at the MS-DOS command line. To turn off key click, type

CLICK OFF [Enter]

or

[Ctrl] [Alt] [>]

at the command line.

INSTALLING THE MOUSE FOR USE WITH NON-GEM PROGRAMS

Installing the mouse driver file (MOUSE.COM) enables you to use the mouse in other applications besides GEM Desktop. To install the mouse, load your GEM Startup disk and type

MOUSE [Enter]

at the MS-DOS prompt. You can also install the mouse by entering

MOUSE

in the AUTOEXEC.BAT file or

DEVICE = MOUSE.SYS

in the CONFIG.SYS file.

CHAPTER 3
INTRODUCTION TO MS-DOS COMMANDS

Commands

Commands are instructions to MS-DOS. They are typed next to the system prompt and activated by pressing **[Enter]**. (Typing a command and pressing **[Enter]** is called entering the command.) Commands can be typed in uppercase or lowercase letters and must be spelled correctly.

The later sections of this chapter describe the most often used MS-DOS commands.You can practice with the examples or use this chapter as a reference for specific commands. To practice, make sure you have a copy of MS-DOS Disk 1 in drive A, and that it is not write-protected. The A> prompt should be displayed on screen and you should be in the root directory of the disk. If you're not sure you're in the root directory, type

CD \[Enter]

This command puts you in the root directory. (A backslash immediately following this command always designates the root directory.)

Note: For complete information on MS-DOS commands, see the **MS-DOS User's Reference**.

PARAMETERS

Some commands are typed alone. Other commands are typed with further instructions, called parameters, which are either optional or required in order to complete the command.

Parameters can tell MS-DOS where to look for information by directing it to one or several of the following: a specific drive, directory, subdirectory, or file. When a drive, directories, and filename are included as parameters, they are listed in a specific order and separated from each other by backslashes (\). The drive is listed first, followed by the directory and subdirectories. The filename is always listed last. This type of listing is called a pathname. For example,

A:\MAILBAG\JULY87\LETTER.TXT

is a pathname. A: means the disk in drive A; the first backslash designates the root directory; MAILBAG is a directory in the root directory; JULY87 is a subdirectory in the MAILBAG directory; and LETTER.TXT is a file in the JULY87 subdirectory. All items are separated from each other by backslashes.

Certain special parameters, called switch parameters or switches, control exactly how MS-DOS performs the command. Switch parameters always begin with a forward slash (/). For example, when the DIR command (which lists a directory) is entered with its switch parameter /w, the screen output is displayed in a wide format (five columns) instead of the default narrow format (one column).

COMMAND SYNTAX

The syntax of each command tells you what parameters and switches can be used with the command and whether or not they are required. Each command description in this chapter shows the command's syntax including its most often used switches.

Certain characters are used in syntax to separate and describe the parameters. These characters are indica-tors only and are not typed with the parameter. The characters and their uses in syntax are listed below:

Character	Name	Use
[ ]	Square brackets	Indicates optional parameters.
< >	Angle brackets	Indicates needed information.
...	Ellipsis	Indicates an item can be repeated.

An example of syntax follows. It shows the syntax for the command DIR and gives an explanation of its parameters:

Syntax: DIR [<drive:>] [<pathname>] [/p] [/w]
Example: DIR A:\MAILBAG\JULY87/p/w

Parameter	Explanation
[<drive:>]	The square brackets indicate that the drive parameter is optional. Use it only if you want to access a drive other than the working drive (given in the MS-DOS prompt). The angle brackets indicate that you must type in a valid drive designation (A:, B:, or C:).
[<pathname>]	The square brackets indicate that the pathname parameter is optional. Use it to list any directory, subdirectory, or filename other than the working directory. Items listed in the pathname must be separated from each other with backslashes (\).
[/p]	The /p (pause) switch is optional. It tells MS-DOS to display the directory one screenful at a time, pausing between displays. If the switch is omitted and the directory is longer than one screenful, it will scroll up offscreen as it is displayed.
[/w]	The /w (wide) switch is optional. It tells MS-DOS to display the directory in a five-column format, rather than the default format of one column.

Follow these guidelines for typing commands and parameters correctly:

* Include all required punctuation characters. Drive letters must be followed by a colon (for example, A:), and a backslash (\) must separate all items in a pathname from each other.

* Commands and parameters can be entered in any combination of uppercase and lowercase letters. For example, diR/P is just as valid as DIR/p.

* A space must always separate the command from the drive parameter. DIR B: is valid; DIRB: is not.

* A space between the command and any parameter other than the drive parameter is optional. For example, DIR/p and DIR /p are both valid.

* Spaces between a series of parameters are optional. For example, DIR/w/p and DIR /w /p are both valid.

* The order of switches is usually not important. For example, DIR/w/p and DIR/p/w are both valid.

* A command and its parameters together can have a maximum of 126 characters and spaces.

* A pathname beginning with a backslash (\) completely specifies the file's location. For example \LETTERS\VENDORS\SUPPLIES.TXT specifies the pathname from the root directory to the filename. A pathname can be relative to the current directory by starting with a directory name contained in it. A period (.) indicates the current directory and two periods (..) indicate the parent of the current directory. For example, to enter a pathname for the SUPPLIES.TXT file in the current directory you would enter .SUPPLIES.TXT.

EDITING COMMANDS

To edit a command line before pressing **[Enter]**, use the **[Backspace] ([<--])** key to erase characters to the left of the cursor, then retype.

If you enter a misspelled command or a command with incorrect syntax at the system prompt, MS-DOS displays a message telling you that it is unable to interpret the command. The usual solution is to re-enter the command (although you can also edit the command with the MS-DOS editing keys described in the **MS-DOS User's Reference**).

Preparing Floppy Disks

FORMAT

The FORMAT command prepares a new disk to receive information by dividing it into the tracks and sectors where information will be stored. You only need to format a disk once.

Warning: FORMAT erases all data on a disk. If your disk contains files you want to save, use the COPY command to copy them to another disk before proceeding.

Syntax: FORMAT <drive:>[/v][/s]
Example: FORMAT A:/v/s

The switch parameter /v (volume name) lets you enter a name for the disk. The switch parameter /s (system files) copies the system files to the newly formatted disk so you can use it as your startup disk.

To format a disk and copy the system files to it, follow these steps:

1. With MS-DOS Disk 1 in drive A, switch on your system as explained in **Chapter 1**. At the MS-DOS prompt, enter

   FORMAT/s

2. When prompted, remove the startup disk and insert a new disk. Press **[Enter]**.

3. MS-DOS displays its progress as it formats the disk, tells you when formatting is complete, and then writes the system files to the new disk.

4. When copying is complete, MS-DOS displays the amount of storage available on the new disk and asks you if you want to format another disk. Enter **[Y]** to format another disk, or **[N]** to return to the system prompt.

When used with the double-sided drives available for the Atari PC, FORMAT will automatically format disks as double-sided.

You can also use FORMAT to erase an entire disk all at once rather than individually erasing each item on the disk with the DEL and RMDIR commands.

Preparing a Hard Disk

FDISK AND FORMAT

Before you can store information on a hard disk, you must prepare it with the FDISK and FORMAT commands.

The FDISK command creates a partition in order to identify the hard disk to the operating system. A partition is a storage area on disk normally used to hold files created with a specific operating system. You can have one to four partitions on your hard disk.

To use all of your disk storage for an MS-DOS partition, run the FDISK program by following the steps below. To create a smaller MS-DOS partition so you'll have room for up to three other operating systems, see **FDISK** in your **MS-DOS User's Reference**.

1. With an MS-DOS system disk in floppy drive A, start the FDISK program by typing

   FDISK [Enter]

2. When the FDISK menu appears, press **[Enter]** to select the default choice of 1, Create DOS Partition.

3. If the disk has already been partitioned, a message indicating this fact appears. You can begin formatting the disk by running the FORMAT command described below.

If the disk has not yet been partitioned, a prompt appears asking you if you want to use the entire disk for the DOS partition. Press **[Enter]** to respond "Yes."

4. When prompted to insert a DOS disk in drive A, make sure the MS-DOS system disk is still in drive A and press any key. MS-DOS reboots and the system prompt appears.

Like a floppy disk, a hard disk must be formatted before you can store information on it. The FORMAT command shown below formats the hard disk, transfers the system files, and prompts you to enter a volume name for the hard disk.

Warning: This command permanently erases all information on the hard disk. If there are any files you want to keep, copy them to another disk before proceeding.

Run the FORMAT command by typing

FORMAT C:/s/v[Enter]

When the hard disk is formatted and the system files have been transferred, you are prompted to enter a volume name using eleven characters or less. Type a name and press **[Enter]**. This volume label will appear each time you display a directory of the disk or obtain specific information about it.

When you restart your system and respond to the date and time prompts, the system prompt appears as C> instead of A>.

Copying Disks

DISKCOPY

The DISKCOPY command copies the entire contents of one disk (the source disk) to another disk (the target disk). If the target disk has not been formatted, DISKCOPY formats it before copying.

Syntax: DISKCOPY [<source drive:>] [<target drive:>]
Example: DISKCOPY A: B:

Warning: DISKCOPY erases all information previously recorded on the target disk. If the target disk contains files you want to keep, copy them (using COPY) to another disk before using DISKCOPY.

To copy disks with DISKCOPY, follow these steps:

1. Insert the source disk (the disk to be copied) into drive A. Have a target disk (the disk to be copied to) ready for each disk you're going to copy. Do not write-protect the disks.

2. If you have one drive, enter

DISKCOPY

If you have two drives, enter

DISKCOPY A: B:

3. MS-DOS will ask for the source disk. Leave the disk to be copied in the drive and press any key.

4. Next, MS-DOS will ask for the target disk. If you have one drive, remove the source disk and replace it with the target disk, then press any key. You may be asked to swap the source and target disks several times.

If you have two drives, insert the target disk into drive B and press any key.

5. When formatting and copying are complete, MS-DOS will ask if you want to copy another disk. If you do, press **[Y]**. When MS-DOS asks for the source disk, remove the disk from drive A, replace it with the next disk you want to copy, and press any key. Then repeat step 4.

If you do not want to copy another disk, press **[N]**.

Note: The target disk must have the same storage capacity as the source disk in order for you to successfully copy from disk to disk using DISKCOPY.

Copying Files

COPY

The COPY command lets you copy files from one directory to another on the same disk or from a source disk to a target disk.

Copying a File to a Directory

You can use COPY to copy a file from the root directory to an existing directory on the same disk.

Syntax: COPY <pathname> <directory name>
COPY <pathname> <pathname>

Example: COPY \LETTER.TXT MAILBAG

For example, you might have a directory called MAILBAG on the disk in your working drive. To copy the file LETTER.TXT from the root directory to the MAILBAG directory, enter:

COPY \LETTER.TXT MAILBAG

Notice that the source and destination pathnames must be separated by a space.

Note: To copy a group of files at once, use wildcards in the pathname (for example, L*.TXT).

Copying Files from Disk to Disk

You can use COPY to copy files from a source disk to a target disk.

Syntax: COPY <drive:> <pathname> <drive:> [<pathname>]
Example: COPY A:LETTER.TXT B:\LEGAL

To copy the file LETTER.TXT from one disk to the root directory of another disk, follow the steps in the relevant section below.

ONE-DRIVE SYSTEMS

1. If you have one drive, make sure the source disk (the disk containing the file) is in the drive. Enter

   COPY A:LETTER.TXT B:

2. When MS-DOS asks you for disk B, remove the source disk and insert a formatted target disk (the disk you want to copy the file to) into the drive. Then press any key. You may be asked to swap the source and target disks several times during copying.

TWO-DRIVE SYSTEMS

1. If you have two drives, insert the source disk (the disk containing the file) into drive A. Insert the target disk (the disk you want to copy the file to) into drive B.

2. Enter

   COPY A:LETTER.TXT B:

When copying is finished, MS-DOS tells you how many files were copied.

Note: To copy a group of files at once, use wildcards in the pathname (for example, *.TXT).

Viewing, Renaming, and Erasing Files

TYPE

The TYPE command displays file contents for you to review. You cannot edit a file displayed with the TYPE command.

Syntax: TYPE <pathname>
Example: TYPE LETTER.TXT

Typing the example above at the MS-DOS prompt displays the file LETTER.TXT in the root directory.

When you use TYPE to display a file larger than one screen, the file will scroll up as it is displayed. To freeze a screen, press **[Ctrl] [Num Lock]** or **[Ctrl] [S]**. Press **[Space Bar]** to resume the display.

REN (RENAME)

The REN command changes the name of one or more files.

Syntax: REN <pathname> <new filename>
Example: REN LETTER.TXT RESUME.DOC

The example above changes the filename LETTER.TXT to RESUME.DOC. Notice that the pathname and new filename parameters must be separated by a space.

You cannot rename a file with a filename that already exists in the same directory. If you try to do so, MS-DOS tells you that a file with that filename already exists.

To rename a group of files at once, use wildcards in the pathname and new filename. For example, to rename

TAXTEXT.85
TAXTEXT.86
TAXTEXT.87

to

IRSTEXT.85
IRSTEXT.86
IRSTEXT.87

enter

REN TAXTEXT.* IRS*.*

Note: REN does not rename directories. If you want a directory to have a new name, you can create a new directory and copy files from the old directory to it. Then erase the old directory and its contents.

DEL (DELETE) AND ERASE

The DEL and ERASE commands erase one or more files. You can use either command; they both work in exactly the same way. Use these commands carefully. Once you erase a file you cannot restore it.

Syntax: DEL <pathname>
ERASE <pathname>

Example: DEL \RESUME.TXT
ERASE \RESUME.TXT

Entering either of the examples above at the MS-DOS prompt erases the file RESUME.TXT from the root directory.

To delete a group of files at once, use wildcards in the pathname (for example, RESUME.*).

Working with Directories

DIR (DIRECTORY)

The DIR command displays a list of some or all files in a directory.

Syntax: DIR [<pathname>][/p][/w]
Example: DIR /p/w

To display all files in the current directory one screenful at a time, enter

DIR/p

The first screenful will look something like this:

```
Directory of A:/
ANSI     SYS     1651      6-21-87    12:00p
COMMAND  COM     237916    6-21-87    12:00p
KEYBSP   COM     3187      6-21-87    12:00p
RESTORE  COM     6012      6-21-8     12:00p
Strike a key when ready...
```

Press any key to view the next screenful.

To see a wide (five column) list of all files with the .COM extension in the root directory of the working drive, enter

DIR *.COM/w

The files displayed will be arranged in five columns across the screen.

MKDIR (MAKE DIRECTORY)

The MKDIR command is used to make and name new directories, and to create levels of directories in your tree structure of directories.

Directories can have names of up to eight characters. They usually do not have extensions. (See **Filenames** in **Chapter 2** for rules on naming directories.)

Syntax: MKDIR [<pathname>]<directory name>
Example: MKDIR \MAILBAG\ADDRESS

Follow these steps:

1. Make a new directory named MAILBAG by entering

   MKDIR MAILBAG

2. Make a subdirectory named ADDRESS in the MAILBAG directory by entering

   MKDIR \MAILBAG\ADDRESS

Note: MD is the abbreviation for MKDIR. For example: MD MAILBAG.

CHDIR (CHANGE DIRECTORY)

The CHDIR command changes the current working directory. It can also be used to display the current directory. Each drive in the system can have a different current directory.

Syntax: CHDIR <pathname>
Example: CHDIR \MAILBAG

The example above accesses the MAILBAG directory in the working drive and makes it the current working directory.

To display the name of the current directory, enter the command followed by the working drive. For example:

CHDIR A:

Note: CD is the abbreviation for CHDIR. For example: CD \MAILBAG.

RMDIR (REMOVE DIRECTORY)

The RMDIR command removes a directory from the disk. Removing a directory erases it completely.

Syntax: RMDIR <pathname>
Example: RMDIR \MAILBAG\ADDRESS

This example will erase the ADDRESS subdirectory from the MAILBAG directory.

You must erase all files (with DEL or ERASE) from a directory before you can erase the directory. This protects you from accidently erasing files you want to keep. To preserve the files, copy them (with COPY) to another directory before erasing them. You cannot remove a directory while it is the working directory.

Note: RD is the abbreviation for RMDIR. For example: RD \MAILBAG.

TREE

The TREE command displays the pathnames of all directories on the specified disk. Use TREE to see how a disk is organized.

Syntax: TREE [/f]
Example: TREE/f

The switch parameter /f (file) asks MS-DOS to display a list of all files on the working disk.

Change to the root directory (enter CD \) and enter the example above to display all directories on the disk and the files they contain.

PATH

The PATH command tells MS-DOS where to look for command files or executable (program) files (files with the .COM or .EXE extensions) that are not in your current directory.

Syntax: PATH [<drive:>] [<pathname>]; [<drive:>] [<pathname>]; [...]

Example: PATH A:\;A:\COMMANDS

Entering the example above tells MS-DOS to look for command and program files in the root directory and COMMANDS directory of the disk in drive A. Notice that search parameters must be separated from each other by semicolons (;).

To search the root directory of the current disk, enter

**PATH **

To search the root directory of a specific disk, add the drive parameter to the PATH command. For example, if you're currently in drive A, entering

PATH B:

searches the root directory of the disk in drive B.

You can add the PATH command to your AUTOEXEC.BAT file. For example, if you have a directory named WORDPROC that contains word-processing applications, adding PATH \WORDPROC to your AUTOEXEC.BAT file lets you enter commands in WORDPROC from any directory.

Enter

PATH;

to delete any parameters previously set with PATH.

Checking Disks, Directories, and Files

CHKDSK (CHECK DISK)

The CHKDSK command reports the total amount of system memory, how disk space is currently allocated, and which files, if any, are damaged or fragmented.

Syntax: CHKDSK [<drive:>] [<pathname>] [/f] [/v]
Example: CHKDSK B:/f/v

The switch parameter /f (fix) tells MS-DOS to correct any errors detected by CHKDSK. The switch parameter /v (view) tells MS-DOS to display the filenames of the files it checks.

Entering the example above checks the disk in drive B. A disk check report looks something like this:

```
Volume     MS-DOSDISK  created Jan 16, 1988 2:47p
362496     bytes total disk space
 45056     bytes in 3 hidden files
  2048     bytes in 2 directories
304128     bytes in 37 user files
 11264     bytes available on disk

655360     bytes total memory
610816     bytes free
```

When CHKDSK reports that files are fragmented, it means that the files are stored in different, noncontiguous sectors of the disk. There's nothing wrong with the files; it only takes MS-DOS somewhat longer to find and read them. You can easily place files in contiguous sectors by copying them to a blank, newly formatted disk.

You should correct any errors CHKDSK reports (refer to the **MS-DOS User's Reference** for information on CHKDSK error messages). Continuing to work after CHKDSK reports bad sectors or other errors could make your disk errors worse.

It's a good idea to add CHKDSK/f to your AUTOEXEC.BAT file in order to avoid working on damaged disks. CHKDSK will give you a system status report when you start up your system. If errors are reported, copy your usable disk contents to a new disk and do not use the damaged disk.

Printing Files

PRINT

The PRINT command sends files to a printer. To use this command, make sure you have a printer connected to your system and ready to print.

Syntax: PRINT <pathname>[/t]
Example: PRINT \LETTER.TXT

Entering the example above prints the file LETTER.TXT in the root directory. You can specify up to ten files to print with one PRINT command by using wildcards in the pathname.

PRINT stores the file or files to be printed in a print queue buffer so you can continue working while printing is underway.

Once printing begins, you can stop it at any time by re-entering the command and adding the switch parameter /t (terminate). Doing this also empties the print queue buffer. For example, entering

PRINT LETTER.TXT/t

stops printing the file LETTER.TXT. To resume printing, re-enter the PRINT command and your parameters. Printing begins from the top of the file.

The first time you use the PRINT command after starting up your system, MS-DOS asks you for the name of the list device (printer). If you have a parallel printer, press **[Enter]** to accept PRN as the list device. If you have a serial printer, enter COM as the list device.

MODE

The MODE command is used to tell MS-DOS whether you have a parallel or serial printer or a serial communications device (modem).

Syntax: MODE <device identifier> <device port number>

Example: MODE LPT1
MODE COM1:9600,n,8,1

Parallel printers are identified as LPT; serial printers are identified as COM. MODE must be correctly set in order for your computer to be able to use your printer.

To make sure your printer is always set to the correct mode, add the MODE command and the correct parameter to your AUTOEXEC.BAT file.

Note: For information on using MODE for a modem and other parameters, refer to the **MS-DOS User's Reference.**

Monitor Display Mode Commands

Your Atari PC includes a graphics display subsystem that emulates the modes of a variety of other graphics display cards. These modes correspond to monochrome, color, or enhanced color monitors and different screen resolutions. Screen resolution is measured in pixels, or screen dots. The more pixels in your screen resolution, the crisper the images are in your screen display.

Selecting the correct display mode command lets you run applications that were developed for a particular mode. If you are unsure which mode is appropriate for your application, check the manual supplied with the software. The monitor display commands can be found on your MS-DOS disks.

The modes you can use are determined by your monitor type and the software you will be using. For example, if you have an EGA monitor and software developed for EGA, you will want to use EGA mode for best performance. However, to use some older software packages on your EGA monitor, you may have to select CGA or MDA mode. Find your monitor and its available commands in the following table.

Monitor	Available Commands
Atari EGA	EGA.COM, CGA.COM, HGC.COM, MDA.COM, PALETTE.COM, HCOLOR.COM, CURSOR
Color	EGA.COM, CGA.COM, PALETTE.COM, CURSOR
Monochrome	MDA.COM, EGA.COM, HGC.COM, CURSOR

Warning: Make sure the switches on the back panel of the computer are set correctly for your monitor type as described in **Chapter 1**. If you have installed a monochrome display adapter card, the switches should be set to SMART OFF. The HGC, MDA, and HCOLOR utilities then become meaningless.

You can enter any of the following mode commands:

Command	Screen Resolution
EGA.COM	640 pixels x 350 lines x 16 selected colors from a palette of 64
CGA.COM	640 pixels x 200 lines in monochrome or 320 pixels x 200 lines X 4 colors (automatically selected by your applications program)
MDA.COM	80 characters x 25 lines of monochrome text
HGC.COM	720 pixels x 348 lines in monochrome graphics mode Eighty 9 x 14 pixel characters x 25 lines in monochrome text mode

You can change to EGA, CGA, and MDA modes by entering the mode command name by itself. For example, to change to CGA mode, enter

CGA

To use HGC mode, enter

HGC FULL

This command provides two complete HGC graphics pages. (The command vari-
ation, HGC HALF, provides only one graphics page, leaving more video memory space available for future expansion.)

When your system is in EGA mode, you can use PALETTE.COM when you want to specify which 16 of the 64 colors you want to use. For a menu of colors you can select, enter

PALETTE.COM

Use the **[Up Arrow]** and **[Down Arrow]** keys to move to the address of the color you want. Use the number keys to assign a number (1 to 16) to the color. When you finish selecting colors, press **[Esc]**, then respond to the enable palette save prompt. Press **[Y]** to save the palette and keep it in effect even when using software with another palette or doing a warmstart with **[Ctrl] [Alt] [Del]**. Press **[N]** if you want the software you use to keep its own palette and if you want the system default palette restored when you restart the system.

If you already know the addresses of the colors you want, you can enter them at the system prompt. For example, to select the first 16 colors and save the palette, enter

PALETTE c1 c2 c3 c4 c5 c6 c7 c8 c9 c10 c11 c12 c13 c14 c15 c16 /s

Omit /s if you don't want to save the palette.

If you select HGC mode on an EGA monitor, you can use HCOLOR.COM to select a shade for the dot color. (You cannot use this command when using HGC with a monochrome monitor.) For a menu of available shades, enter

HCOLOR

Use **[Pg Up]** and **[Pg Dn]** to view the selections. Type the number of the shade you want. Press **[Esc]** to save the change and exit, or **[Q]** to quit without saving the change.

A Few Other Useful Commands

CURSOR

The CURSOR command lets you decide whether to have a blinking or nonblinking cursor at the system prompt.

Syntax: CURSOR [NOBLINK] [BLINK]
Example: CURSOR NOBLINK

When you turn on your system, the cursor will appear as a blinking bar. If you'd like a nonblinking cursor, enter the example above at the system prompt.

To restore the blink, enter

CURSOR BLINK

at the system prompt.

PROMPT

The PROMPT command may be used to add the date, time, current directory, and other information to the system prompt.

Syntax: PROMPT [$D][$T][$N][$P][$_]
Example: PROMPT D_T_NP

In the PROMPT syntax, D stands for date, T for time, N for the working drive, P for the working directory, and _ for a line break. Each parameter is preceded by the dollar sign ($).

Entering the example above creates a three-line prompt that displays the date, time, working drive, and working directory.

You can add the PROMPT command and its parameters to your AUTOEXEC.BAT file so it will automatically be in effect when you start up your system.

CLS (CLEAR SCREEN)

The CLS command erases everything on screen and displays the system prompt at the top of the screen.

Syntax: CLS

Common MS-DOS Error Messages

Sometimes MS-DOS displays an error message when you start up your system or enter a command. There's usually no reason to be alarmed. In most cases you'll simply need to load the proper disk or re-enter the command.

The following is an alphabetical list of common error messages with an explanation of what they mean and a description of the action you should take when you see them. (For a complete list of error messages, see the **MS-DOS User's Reference**.)

<TYPE> <ACTION> DRIVE <X>
ABORT, IGNORE, RETRY

MS-DOS is unable to read or write to the specified drive because of some problem. The problem (type), whether it occurred while the drive was trying to read or write (action), and the drive letter (x) are specified in the first line of the message.

The most common reasons for this message are that you are specifying a drive that isn't loaded with a disk or a drive that doesn't exist. Sometimes the problem type suggests what action to take. (For example, "Write-protect error" means you should remove the write-protection from the disk.) Remedy the problem and then respond by entering **[R]**. If you like, you can enter **[A]** to stop the command and return to the system prompt.

BAD COMMAND OR FILENAME

You entered a command or filename that MS-DOS cannot recognize. If you're entering an external command (a command MS-DOS doesn't keep in memory) or feel certain the file exists, run the DIR command to make sure it's on the current disk (or in your execution PATH). Also, make sure the command or filename is spelled correctly before you enter it.

BAD OR MISSING COMMAND INTERPRETER

MS-DOS was unable to start up because it could not find the COMMAND.COM file. Either COMMAND.COM is missing or damaged or a startup disk is not loaded. Make sure a valid startup disk is loaded in drive A before you switch on your system.

BAD PARTITION TABLE

There is no MS-DOS partition on the hard disk. Create an MS-DOS partition by running option 1 on the FDISK menu as described in this chapter or in the **MS-DOS User's Reference**.

ERROR READING/WRITING PARTITION TABLE

The FORMAT command could not read or write the partition table created when you ran FDISK. Run option 1 of FDISK again.

FILE NOT FOUND

See the explanation for "Bad command or filename."

INSERT DISK CONTAINING COMMAND.COM IN DRIVE A:
AND STRIKE ANY KEY WHEN READY

This message may appear when you exit a program. It tells you that MS-DOS couldn't find COMMAND.COM. Reload COMMAND.COM by following the instructions in the message.

INTERNAL STACK ERROR

Enter the following line in the CONFIG.SYS file:

STACKS = 16, 128

INVALID DRIVE SPECIFICATION

The drive you specified is not recognized by MS-DOS. Make sure all drives on your system are correctly installed and the cables secure, then re-enter the drive specification.

INVALID NUMBER OF PARAMETERS

You specified an incorrect number of parameters. Check the command syntax and re-enter the command.

INVALID PARAMETER

You entered an incorrect parameter with the command. Check the command syntax and re-enter the command.

INVALID PATH OR FILENAME

You specified a path or filename that does not exist on the current disk. Make sure the path or filename exists and is spelled correctly.

NO FIXED DISK INSTALLED

Your hard disk drive cables are improperly attached or the disk needs to be low-level formatted. Check cable connections. If this message appears again, low-level format the disk as described in your hard disk manual (or contact your hard disk dealer for assistance).

NON-SYSTEM DISK OR DISK ERROR
REPLACE AND STRIKE ANY KEY WHEN READY

Either the startup drive does not contain a disk, or the disk in the startup drive does not contain the system files. Make sure the proper disk is loaded and strike any key to continue.

SYNTAX ERROR

You incorrectly entered a command. Check the command syntax and re-enter the command.

TRACK 0 BAD--DISK UNUSABLE

The disk media at track 0 is defective and the disk cannot be formatted. Contact your hard disk dealer.

APPENDIX A
SYSTEM MAINTENANCE

In Case of Problems

If you run into problems operating your Atari PC, don't panic. Chances are the difficulty is something you can easily remedy.

CHECK THESE FIRST

If your Atari PC just won't work--for instance, the power light won't come on or the monitor screen has no display--check these areas:

Power Switches Check that the computer, monitor, and all peripherals with power switches are switched on, and the brightness and contrast controls on your monitor are properly adjusted.

Cable Connections Test all cables to make sure they're correctly and securely connected. Check the integrity of electrical outlets by plugging in a working desk lamp or other appliance.

Keyboard and Mouse If either your keyboard or mouse doesn't respond, it may be that it is not operational with the application you're using. With GEM Desktop, the keyboard generally doesn't respond except when you are naming items in a dialog box or using the mouse control keys. When you're working at the MS-DOS command line or in a program operated from the keyboard, the mouse isn't operational.

Extra RAM After installing extra memory chips, check the amount of RAM displayed during startup. If the total amount of RAM (the standard 512 kilobytes plus the amount you installed) isn't shown, switch off and disconnect your system and carefully reseat the RAM chips. (See **Appendix B**.)

Expansion Boards and Internal Drives If an expansion board or internal drive isn't performing its intended function, switch off and disconnect your system. Remove the cover and make sure the board is firmly seated in its connector and the internal drive is securely con-nected to its interface and power cable. (See **Appendix C**.)

HARDWARE PROBLEMS

If something goes wrong with your hardware, your Atari PC2 will beep during startup and display error codes. When this happens, note the beeps and error codes and identify them from the tables below. Try to fix the problem by checking the areas in the section **Check These First** on the previous page. If the problem persists, contact an authorized Atari service center.

Beeps	**Typical Problem**
One short beep	Normal operation; no problem
No beep, continuous beep, or short repeating beeps	Power supply
One long beep and one short beep	System board
One long beep and two short beeps	Monitor cable, display, video subsystem
One short beep and the drive busy light stays on	Disk drive or floppy controller

Error Codes	**Problem Area**
110-019	Undetermined problem
020-030	Power supply
101-199	System board
201-203	Memory (RAM)
301-304	Keyboard
401-432	Monochrome monitor
501-548	Color monitor
601-626	Floppy disk drive
700-799	Numeric data processor
901	Parallel printer connector
1101	Serial connector
1401	Printer (general)
1404	Dot matrix printer
2400 series	Enhanced graphics subsystem

IT JUST WON'T WORK

If you experience operating problems that you can't resolve, take your Atari PC2 system to an authorized Atari service center. For the location of the nearest center, contact your Atari dealer or see **Customer Support** at the end of this manual.

Caring for Your PC System

Follow the guidelines in this section to ensure continuing excellent performance from your Atari PC2.

HARDWARE CARE

* Set up your system on a sturdy, level surface away from dust, grease, extreme temperatures, direct sunlight, moisture, and high humidity.

* Avoid smoking near your system. Set coffee cups, soft drinks, and other liquids at a safe distance to prevent spilling them on your system. Don't let small items drop between the keys on the keyboard.

* Always switch off your computer and peripherals before connecting or disconnecting components.

* When you switch off the computer, wait at least ten seconds before switching it on again.

* Switch off your computer before cleaning it. Clean only the outside of the components, using a soft, slightly damp, lint-free cloth. Do not use cleansers, abrasives, or solvents.

* Touch the metal frame of your computer to ground yourself before installing chips, expansion boards, or internal drives.

* To ship or store your system, repack it in the original packing materials. Replace protective inserts in floppy disk drives and use a head parking program (if available) to park the heads on the hard disk,

FLOPPY DISK CARE

* Switch on your computer before inserting disks into the disk drives. Remove the disk before switching off the computer.

* Insert and remove disks from the drive only when you're sure the drive's busy light is off.

* Store your disks upright in their protective envelopes away from extreme heat, moisture, direct sunlight, and sources of magnetism (monitor, television, electric motor, telephone, and so on).

* Never touch a disk's magnetic media. Don't bend disks or use paper clips on them.

APPENDIX B
INSTALLING EXTRA RAM AND THE NUMERIC DATA PROCESSOR

Your Atari PC2 can accommodate extra RAM chips and a numeric data processor. The extra RAM increases the system's memory to 640 kilobytes and the numeric data processor speeds calculations. Many applications require extra RAM to run or are designed to take advantage of a numeric data processor. You can obtain these chips from your Atari dealer.

Installing these chips involves removing the computer's cover and installing microchips on the motherboard. While the installation is not difficult, you should take care to follow the instructions exactly.

Note: When setting up internal options in your system, install the RAM and 8087 chips BEFORE you install expansion boards. If full-size expansion boards are already installed, you must remove them in order to access the RAM and 8087 chip sockets.

The RAM sockets hold four 41464 64 kilobyte x 4 dynamic RAM chips. The chips (labeled 41464-15 or 41464-12) should be rated at a speed of 150 nS or higher. You should install all four chips. You can also install any of the following Intel numeric data processors:

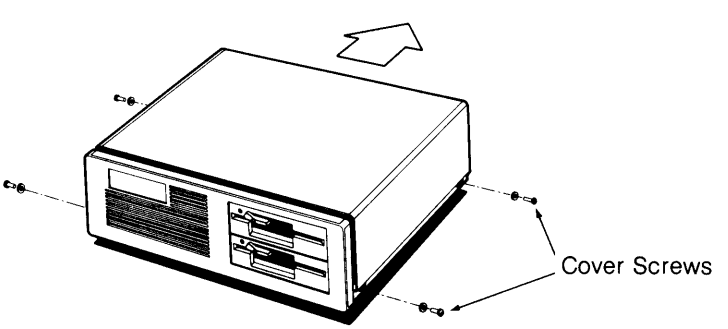
8087 (5 MHz)
8087-2 (8 MHz)
8087-1 (10 MHz)

Warning: If you install the 5 MHz numeric data processor, you will not be able to use the PC's turbo mode.

Follow these steps to install the chips:

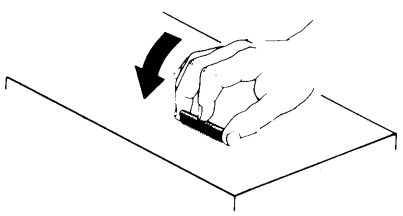
1. Be sure your computer is switched off, unplugged, and disconnected from all other peripherals.

2. Remove the computer cover screws. There are two on each side of the computer. Then slide the cover straight back until it comes off.



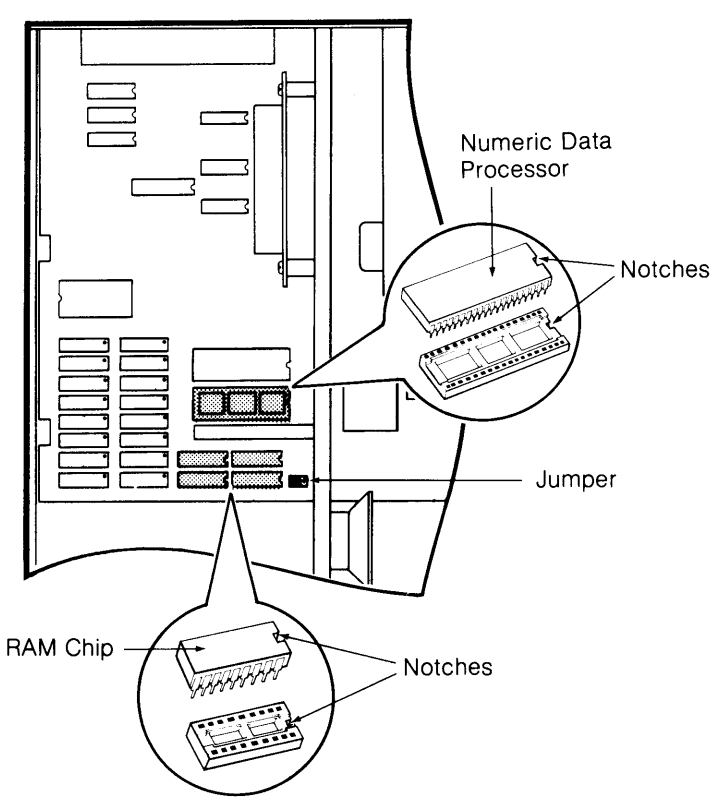
3. To prevent static discharge that could damage the computer, ground yourself by briefly touching the metal frame of the computer.

4. To ensure a good fit, press the pins on one side of a chip against a flat surface to bend them slightly towards the center of the underside of the chip. The pins should be at 90-degree angle with the top of the chip. Bend the pins on the other side of the chip in the same way. Repeat for each chip you are installing.

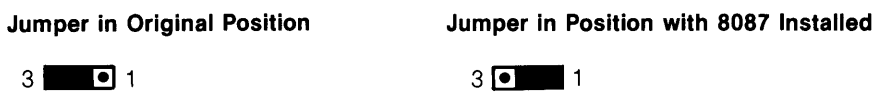


5. Find the correct socket in the illustration below for the chip or chips you're installing. Hold the chip so its notch matches the notch on the socket. Line up the pins on the chip with the holes in the socket and gently push the chip into the socket. Be careful not to bend the pins. (If you do bend the pins, gently remove the chip and carefully bend the pins back into their original position. Then reinsert the chip.) Repeat for each chip you're installing.

Chip Sockets on the Motherboard



6. If you installed a numeric data processor, locate the jumper to the lower right of the extra RAM sockets. You must move this jumper to a different pin position when you install this chip. Use your fingers or a tool such as needle-nosed pliers to remove the jumper and replace it in the position shown in the illustration.



7. Replace the computer cover and reinstall all screws.

The Atari PC automatically tests the installed RAM at startup. After installing additional RAM, you should see the message

640 KB RAM GOOD

whenever you switch on the system with a coldstart. If you don't see that message, carefully disassemble your system and make sure the RAM chips are inserted correctly.

APPENDIX C
INSTALLING EXPANSION BOARDS AND INTERNAL DRIVES

Adding expansion boards and internal drives to your Atari PC2 increases the functionality of your system and lets you customize it to suit your needs. You can install these devices yourself by following the instructions in this appendix.

Note: When setting up internal options in your system, install the RAM and 8087 chips BEFORE you install expansion boards. Full-size expansion boards block the chip sockets and must be removed in order to access the chip sockets.

Your Atari PC2 has four slots for full-size or half-size expansion boards. You can add XT-compatible hard disk controller, network, modem, or other boards in these slots. The system also has two drive bays for floppy disk, hard disk, tape, removable data cartridge, or other PC XT-compatible internal drives.

Your system comes equipped with a floppy drive controller that can be connected to two drives (floppy disk, tape, or other drives that use a floppy disk controller). Hard disks and other types of drives require separate controller boards.

Follow the instructions in this appendix to secure a board or internal drive in the PC2 and find the connectors and/or cables you'll need to complete the installation. Use the instructions supplied with the device for specific information on preparing the device and connecting cables. The instructions supplied with the device may also include directions for securing the device and locating connectors and cables, but may assume a PC system built differently from the Atari PC2.

Warning: If you perform any operation or modification to the inside of your computer other than those described in this manual, Atari Corporation reserves the right to disclaim warranty for your Atari PC2 or any other adversely affected component. Also, your Atari PC2 warranty does not cover damage caused by hardware or software not manufactured by Atari Corporation.

Installing an Expansion Board

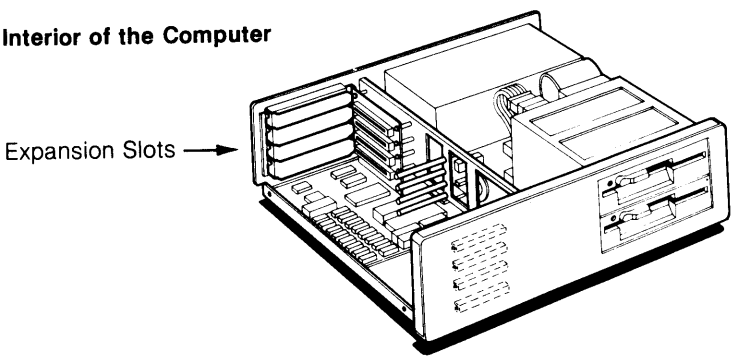
The slot you choose for a board depends on the particular require-ments of the board. If your board connects to a cable, choose a slot that allows the cable to be easily and properly connected. If the manufacturer recommends that you position the board for maximum airflow, choose the top slot. Always install boards from the bottom slot up.

Follow these instructions to install a board:

1. Switch off your computer system and unplug it from the elec-trical outlet.

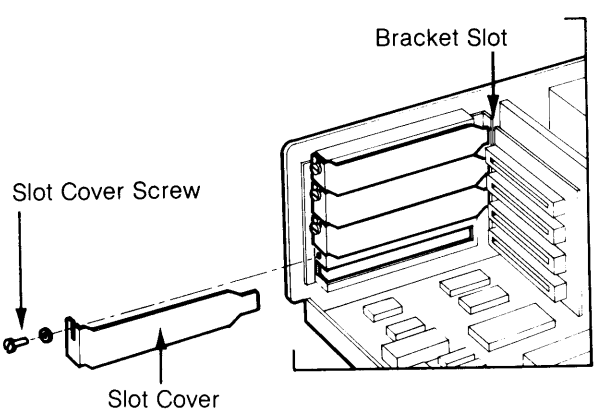
2. Remove the computer's cover as described in **Appendix B**. You will see the interior of the computer.

Interior of the Computer

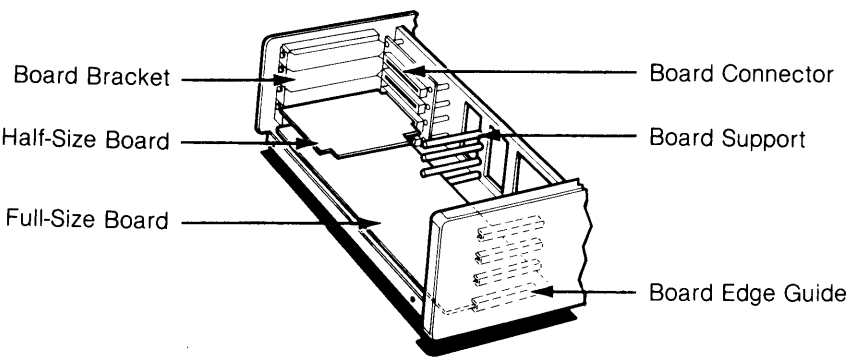


3. To prevent static discharge that could damage the computer, ground yourself by briefly touching the metal frame of the computer.

4. Remove the slot cover screw and slide out the slot cover. Save the screw for step 6.



5. Holding the board by its sides with the bracket on the left, align the sides of the board at the slot opening and board edge guide. Gently slide the board forward until the connector edge with the gold stripes is firmly seated in the board connector. You'll feel a slight resistance as you push the board into place. When correctly installed, the board bracket fits into the bracket slot and the board rests on the board support.



Note: Half-size boards are installed in the same way as full-size boards except, due to the board's short length, the board supports and board edge guides aren't used.

6. Secure the board by replacing the slot cover screw you removed in step 4.

7. If you are installing a monochrome video card, you must set the motherboard video subsystem to color (reset the monitor type selection switches on the back of the computer to CGA or EGA with SMART OFF). If you are installing a color video card, you must set the motherboard video subsystem to monochrome (reset the monitor type selection switches to MDA).

8. Replace and secure the computer's cover. Plug the system's power cord into an electrical outlet.

Installing an Internal Drive

Your Atari PC2 has room for two internal drives. You can add or swap drives as necessary to get the drive configuration you want. Drives can go in either bay, though a hard disk drive should go in the top bay for maximum airflow.

Follow these steps to install an internal drive:

1. Switch off your computer system and unplug it from the electrical outlet.

2. Remove the computer's cover as described in **Appendix B.**

3. To prevent static discharge that could damage the computer, ground yourself by briefly touching the metal frame of the computer.

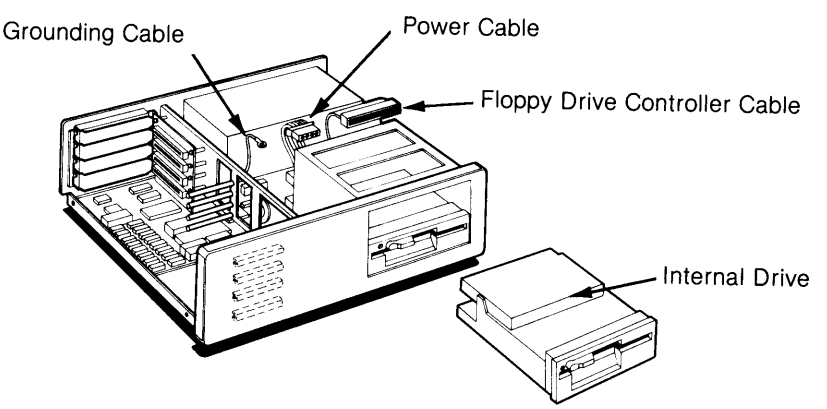
4. As necessary, remove the cover plate or drive from the bay you want to use. To remove the cover plate, remove the cover plate screws and pull off the plate. To remove a drive, follow the steps in the next section, **Removing an Internal Drive**.

5. Position the drive in the bay and partially slide it partially in.

6. Locate the power, interface, and grounding cables and connect them to the back of the drive according to the manufacturer's instructions. If you are installing a drive that connects to a floppy drive controller, use the floppy drive controller cable at the back of the drive bay for the interface cable. If you are installing a drive that connects to its own controller board, use the interface cable supplied with the controller board or drive.

7. Slide the drive completely into the bay and secure it to the drive cage with four screws (two on each side, supplied by the manufacturer).

Installing an Internal Drive



REMOVING AN INTERNAL DRIVE

Follow these steps to remove a drive:

1. Switch off your computer system and unplug it from the electrical outlet.

2. Remove the computer's cover as described in **Appendix B**.

3. To prevent static discharge that could damage the computer, ground yourself by briefly touching the metal frame of the computer.

4. Remove the screws that secure the drive to the drive cage. There are two screws on each side of the drive.

5. Disconnect all cables at the back of the drive.

6. Gently slide the drive out of the drive bay.

APPENDIX D
ATARI PC2 SPECIFICATIONS

COMPUTER

Processor	8088
Clock Rate	4.77 MHz standard; 8.0 MHz turbo mode
Memory:	
RAM	512 kilobytes standard, 640 kilobytes with extra RAM chips (four 64 kilobyte x 4 dynamic RAM; 41464-15, 41464-12, or equivalent)
ROM	32 kilobytes
Power Supply	135 watts
Interfaces	PC-protocol keyboard jack Quadrature mouse port Video port RS232C serial port Parallel printer port Floppy disk drive port
Expansion Slots	Five XT-type
Numeric Data Processor Socket	Uses an 8087 (5 MHz), 8087-2 (8 MHz), or 8087-1 (10 MHz) numeric data processor chip.
Dimensions:	
Height	5 in. (18 cm)
Width	17 in. (40 cm)
Depth	14.5 in. (36 cm)

5 ¼-INCH FLOPPY DISK DRIVE

Tracks	40
Sector Size	512 bytes
Storage Capacity	360 kilobytes
Rotational Speed	300 rpm
Data Transfer Rate	250 kilobytes/second
Step Rate	Less than 6 microseconds
Controller	Support for 2devices

VIDEO GRAPHICS ADAPTER

Monitor Types	Monochrome display Color display Enhanced display
Display Modes:	
EGA	Monitor: EGA
	Screen resolution and colors: 640 pixels x 350 lines x 16 selected colors from a palette of 64
	Typical character cell size: 8 x 14 pixels
CGA	Monitors: EGA, color
	Screen resolution and colors: 640 x 200 lines in monochrome or 320 pixels x 200 lines x 4 colors (automatically selected by the application)
	Typical character cell size: 8 x 8 pixels
MDA	Monitors: EGA, monochrome
	Screen resolution: 80 characters x 25 lines of text
	Typical character cell size: 9 x 14 pixels

HGC	Monitors: EGA, monochrome Screen resolution and colors: 720 pixels x 348 lines in monochrome graphics mode or 80 characters x 25 lines in text mode Typical character cell size: 9 x 14 pixels

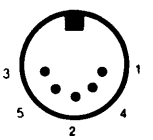
KEYBOARD

Features	IBM PC AT layout: IBM PC XT protocol compatible; 84 keys including 56 typewriter keys, 10 function keys, and 18 keypad keys
Dimensions:	
Maximum height	1.5 in. (3.8 cm)
Width	17.75 in. (45 cm)
Depth	7.75 in. (19.5 cm)
Weight	3.5 lb. (1.6 kg)

APPENDIX E
ATARI PC2 CONNECTOR PINOUTS

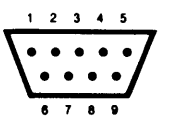
KEYBOARD

1 -- Clock
2 -- Data
3 -- Reset
4 -- Ground
5 -- + 5 VDC



MOUSE

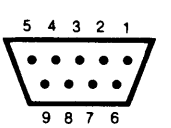
1 -- XB Quadrature Signal
2 -- XA Quadrature Signal
3 -- YA Quadrature Signal
4 -- YB Quadrature Signal



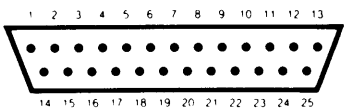
5 -- Center Button (optional, switch closure to ground)
6 -- Left Button (switch closure to ground)
7 -- VCC
8 -- Ground
9 -- Right Button (switch closure to ground)

VIDEO

1 -- Ground
2 -- Secondary Red (The internal DIP switch allows this output pin to be grounded for use with older CGA and MDA compatible monitors.)
3 -- Primary Red
4 -- Primary Green
5 -- Primary Blue
6 -- Secondary Green/Intensity
7 -- Secondary Blue/Monochrome Video
8 -- Horizontal Synch
9 -- Vertical Synch

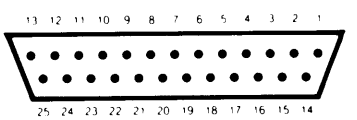


SERIAL



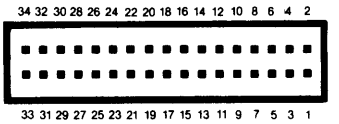
1 -- Chassis Ground
2 -- OUT Transmit Data
3 -- IN Received Data
4 -- OUT Ready to Send (RTS)
5 -- IN Clear to Send (CTS)
6 -- IN Data Set Ready (DSR)
7 -- Ground
8 -- IN Carrier Detect
20 -- OUT Data Terminal Ready (DTR)
22 -- IN Ring Indicator (RI)

PRINTER



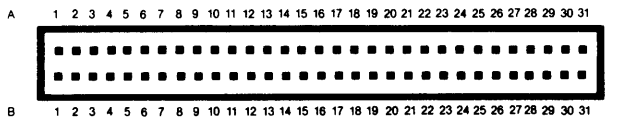
1 -- OUT Strobe
2 -- OUT Data 0
3 -- OUT Data 1
4 -- OUT Data 2
5 -- OUT Data 3
6 -- OUT Data 4
7 -- OUT Data 5
8 -- OUT Data 6
9 -- OUT Data 7
10 -- IN Ack
11 -- IN Busy
12 -- IN Paper Error
13 -- IN Select
14 -- OUT Auto Feed
15 -- IN Error
16 -- OUT Initialize Printer
17 -- OUT Select Input
18-25 -- Ground

INTERNAL FLOPPY DRIVE CONNECTOR



1 -- Ground	2 -- Unused
3 -- Ground	4 -- Unused
5 -- Ground	6 -- Unused
7 -- Ground	8 -- Index
9 -- Ground	10 -- Motor Enable A
11 -- Ground	12 -- Drive Select B
13 -- Ground	14 -- Drive Select A
15 -- Ground	16 -- Motor Enable B
17 -- Ground	18 -- Direction (Stepper Motor)
19 -- Ground	20 -- Step Pulse
21 -- Ground	22 -- Write Data
23 -- Ground	24 -- Write Enable
25 -- Ground	26 -- Track 0
27 -- Ground	28 -- Write Protect
29 -- Ground	30 -- Read Data
31 -- Ground	32 -- Select Head
33 -- Ground	34 -- Unused

EXPANSION SLOTS



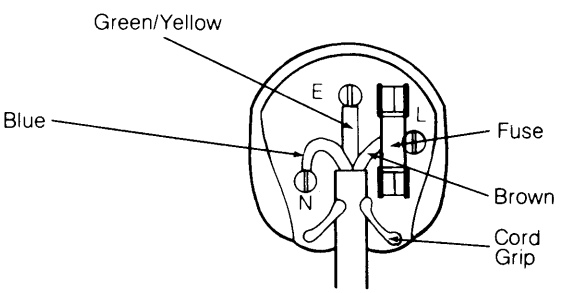
A1 -- Reserved	B1 -- Ground
A2 -- Data 7	B2 -- +Reset
A3 -- Data 6	B3 -- +5V
A4 -- Data 5	B4 -- Interrupt Request 2
A5 -- Data 4	B5 -- Reserved
A6 -- Data 3	B6 -- + DMA Request 2
A7 -- Data 2	B7 -- -12V
A8 -- Data 1	B8 -- Reserved
A9 -- Data 0	B9 -- +12V
A10 -- I/O Channel Ready	B10 -- Ground
A11 -- Address Enable	B11 -- - Memory Write
A12 -- Address 19	B12 -- - Memory Read
A13-- Address 18	B13 -- - I/O Write
A14 -- Address 17	B14 -- - I/O Read
A15 -- Address 16	B15 -- - DMA Acknowledge 3
A16 -- Address 15	B16 -- + DMA Request 3
A17 -- Address 14	B17 -- - DMA Acknowledge 1
A18 -- Address 13	B18 -- + DMA Request 1
A19 -- Address 12	B19 -- - DMA Acknowledge 0
A20 -- Address 11	B20 -- Clock
A21 -- Address 10	B21 -- + Interrupt Request 7
A22 -- Address 9	B22 -- + Interrupt Request 6
A23 -- Address 8	B23 -- + Interrupt Request 5
A24 -- Address 7	B24 -- + Interrupt Request 4
A25 -- Address 6	B25 -- + Interrupt Request 3
A26 -- Address 5	B26 -- - DMA Acknowledge 2
A27 -- Address 4	B27 -- + DMA Terminal Count
A28 -- Address 3	B28 -- + Address Latch Enable
A29 -- Address 2	B29 -- + 5V
A30 -- Address 1	B30 -- + Oscillator
A31 -- Address 0	B31 -- + Ground

APPENDIX F
POWER CONNECTION
IN THE UNITED KINGDOM

In the United Kingdom, the Atari PC operates on ~240V 50 Hz mains supply.

The wires in the mains lead of the Atari PC are colored as follows:

Wire	Color
Green/Yellow	Earth (E)
Blue	Neutral (N)
Brown	Live (L)



If the colors of the wires do not correspond to the colored markings identifying the terminals in your plug, proceed as follows:

Connect the GREEN/YELLOW wire to the terminal in the plug marked by the letter E or by the safety earth symbol ⏚, or colored GREEN or GREEN/YELLOW.

Connect the BLUE wire to the terminal marked with the letter N or colored BLACK.

Connect the BROWN wire to the terminal marked with the letter L or colored RED.

If a 13-amp (BS1363) plug is used, a 3-amp fuse must be fitted, or if any other type of plug is used, a 3- or 5-amp fuse must be fitted either in the plug, adapter, or on the distribution board.

GLOSSARY

access To retrieve data from storage.

alphanumeric keys The letter, number, and symbol keys on the keyboard. The alphanumeric keys are positioned on the computer keyboard just as they are on a standard typewriter keyboard.

ANSI American National Standards Institute. This institute defines terminal emulation standards as well as other computer data standards.

application A program written to solve a specific problem or produce a specific result, and that can be executed by a computer. That is, the computer is "applied" to the task. (See **program**.)

AUTOEXEC.BAT AUTOmatically EXECuted BATch file. A file you create that automatically executes the commands it contains during system startup.

back up To make an archive copy of a disk or file. Backing up disks safeguards data on the disks from damage or loss.

batch file A file containing one or more commands, providing a convenient way to run those commands by entering the batch file name at the system prompt. Commands in the file execute sequentially until the file ends.

bit The smallest unit of computer memory capable of representing ON or OFF. Eight bits equal one byte. (See **byte**.)

boot To begin the computer's operation. Booting is usually accomplished by switching on your system. (See **coldstart** and **warmstart**.)

boot disk The disk you use to boot your Atari PC. The boot disk must contain the system files. (See **system files**.)

busy light The light on a disk drive that indicates it is reading from or writing to a disk.

byte A unit of computer memory. Each byte consists of eight bits, and is a unique character within the computer. For example, the letter "a" is stored in memory as one byte. (See **bit** and **kilobyte**.)

CGA Color Graphics Adapter. One of the available monitor display modes. CGA can be selected by the applications programs that use it, and gives you a maximum screen resolution of 640 pixels x 200 lines in monochrome, or 320 pixels x 200 lines x 4 colors. (Compare to **EGA**, **HGC**, and **MDA**.)

coldstart Booting the computer by switching on the power. A coldstart is initiated while the computer is running by switching off the power for ten seconds, then switching it back on. A coldstart completely initializes the system. (Compare to **warmstart**.)

commands Instructions for controlling MS-DOS or running programs.

CONFIG.SYS A file you can create that allows the operating system software to be configured to your needs and recognize peripherals.

configuration A particular arrangement of peripherals on a computer system, or software installed to your preferences.

control keys Single keys or key combinations used to control computer operations. For example, the keys **[Ctrl]**, **[Alt]**, and **[Del]**, when pressed simultaneously as a key combination, restart the system.

copy To duplicate the information in a file, directory, or disk.

cursor A marker that appears on screen to indicate the position of the next action. The standard MS-DOS command line cursor is a blinking horizontal bar.

data file A collection of information used by an application.

default A value, option, or setting that the computer automatically selects unless you direct it otherwise.

device See **peripheral**.

directory A list of files. (See **root directory**, **subdirectory**, and **working directory**.)

disk drive The primary data storage device for your Atari PC. The computer uses the disk drive to retrieve information from or store information on a disk.

DISKCOPY A command that duplicates data on one disk to another disk.

display mode commands Commands that change screen resolution and the number of available colors. (See **CGA**, **EGA**, **HGC**, and **MDA**.)

double-sided Having both sides of a disk's magnetic media certified as safe for storing data. A double-sided 5 ¼-inch disk can store up to 360 kilobytes of data; a double-sided 3 ½-inch disk can store up to 720 kilobytes.

EGA Enhanced Graphics Adapter. One of the available monitor display modes. EGA gives you a maximum resolution of 640 pixels x 350 lines x 16 selected colors from a palette of 64 colors. (Compare to **CGA**, **HGC**, and **MDA**.)

EGA video subsystem The chip on the Atari PC2's motherboard that lets you have EGA screen resolution and color selection. (See **EGA**.)

enter To instruct MS-DOS to run a command. To enter a command, type the command on the MS-DOS command line and press **[Enter]**.

error message An on-screen message indicating that MS-DOS or an application is unable to process a command.

expansion board An integrated circuit board that expands or enhances the capabilities of a computer system. Hard disk controllers, network controllers, modems, and extra memory can all be supplied on expansion boards. You can add four expansion boards to your Atari PC2

expansion slot A slot in a computer that accommodates an expansion board.

extension The file type appended to the name of a file and separated from it with a period (.). An extension is optional and can have up to three characters. Some common extensions are .DOC, .TXT, and .BAT.

file A collection of information that can be stored on a disk or held temporarily in RAM.

floppy disk The magnetic media used to store programs and information generated on the Atari PC. The media is made of material similar to audio tape and is encased in a protective covering. The Atari PC's internal disk drive uses 5 ¼-inch floppy disks. If you add an optional 3 ½-inch floppy disk drive to your Atari PC system you can use 3 ½-inch disks.

format To set the patterns on a floppy disk that enable it to store information. Formatting erases any information previously stored on the disk.

function keys The keys **[F1]** through **[F10]** along the left edge of the Atari PC keyboard. These keys are used for special purposes in many applications.

GEM Graphics Environment Manager. A graphics-based operating environment that lets you run GEM Desktop and other GEM-based applications.

GEM Desktop A screen graphics representation of a desktop used for running GEM applications and some MS-DOS commands.

GEM Paint A design and paint program you can run from GEM Desktop.

GEM Write A word-processing program you can run from GEM Desktop.

hardware The actual physical apparatus of your computer system. (Compare to **software**.)

HGC Hercules Graphics Card. One of the available monitor display modes. HGC gives you a screen resolution of 720 pixels x 348 lines in monochrome graphics mode, or eighty 9 x 14 pixel characters x 25 lines in monochrome text mode. (Compare to **CGA**, **EGA**, and **MDA**.)

initialization The process that sets the computer to its starting configuration.

integrated circuit The circuitry contained in a microchip. The motherboard and expansion boards contain a number of microchips for performing specific functions. (See **microchip**.)

interface An electronic connection that allows communication between the computer and a peripheral.

interface cable A cable that connects the computer to a peripheral, or a peripheral to another peripheral.

jumper Clips that connect pins on a jumper block. The position of a jumper on the pins determines functions on the motherboard or an expansion board.

kilobyte 1,024 bytes of memory. (See **byte**.)

MDA Monochrome Display Adapter. One of the available monitor display modes. MDA gives you a screen resolution of 80 characters x 25 lines. (Compare to **CGA**, **EGA**, and **HGC**.)

megabyte One million bytes or 1,024 kilobytes of memory. (See **byte** and **kilobyte**.)

memory The electronic circuits that the Atari PC uses to store data and programs. There are two kinds of computer memory: RAM and ROM. RAM loses its data when the computer loses power; ROM retains its data whether the computer has power or not. (See **RAM** and **ROM**.)

microchip A small integrated circuit contained in a small block. The microchips you install in your Atari PC have pins on their undersides so they can be plugged into chip sockets on the motherboard.

modem MOdulator/DEModulator. A device that enables you to establish a communication link between your computer and other computers and online information networks via telephone lines.

monitor See **video display**.

motherboard The integrated circuit board inside the Atari PC that includes the processor chip, RAM chips, the video subsystem, and provisions for additional chips.

mouse A small, hand-manipulated device connected to your Atari PC2 that controls the movement of a pointer on GEM Desktop. The mouse is used with GEM applications and other programs that can be operated with a mouse.

MS-DOS Microsoft Disk Operating System. The software that coordinates all computer operations on the Atari PC2.

MS-DOS command level The MS-DOS command line. Commands are entered from the MS-DOS command level unless they can be selected from within an application such as GEM Desktop.

MS-DOS command line The line on screen containing the MS-DOS prompt, where you enter the names of MS-DOS commands and programs you want to run.

network board A board that enables your Atari PC to become part of a network of computers. Computers linked on a network can share hard disks, printers, and other peripherals.

numeric data processor An optional chip that performs math calculations (such as calculating spreadsheets) normally done by the system's main processor. This processor has instructions that are carefully tuned for fast and accurate floating point calculations.

parallel interface An industry-standard interface connecting parallel printers and other parallel peripherals. The parallel interface sends and receives eight bits of data at a time. The parallel interface port on the back of the Atari PC2 is labeled "Printer."

parameter Further data entered with a command that specify how the command will operate.

pathname The list of items that specify the path through the directories on the disk to the current directory. A pathname consists of a string of directories and subdirectories separated by backslashes (for example, \DOCUMENT\TEXT.DOC).

PC mode The Atari PC2's standard operating speed of 4.77 MHz. (Compare to **turbo mode**).

peripheral Any kind of exterior device, such as a disk drive, monitor, or printer, that you connect to your computer.

pixel A dot on the Atari PC's video display. Pixels are arranged in a grid and set according to your monitor type and selected display mode. Pixel is short for picture element.

program A detailed and explicit set of instructions for accomplishing some purpose, expressed in a language that can be read by a computer. (Compare to **application**.)

prompt Any symbol or message on screen indicating that the computer is awaiting input from the user. The standard MS-DOS prompt is A> followed by a blinking horizontal bar.

RAM Random Access Memory. The part of the computer's memory that is used to write data to and read data from a disk. When you work with your computer, the information displayed on the monitor screen is in RAM. Information stored in RAM is lost when you switch off the computer. The Atari PC2 has 512 to 640 kilobytes of RAM depending on whether additional RAM chips have been added.

removable data cartridge drive A drive that uses removable high-capacity disk cartridges.

resolution The number of pixels on a monitor screen. More pixels mean crisper screen images. You can change the resolution with the display mode commands. (See **display mode commands**.)

ROM Read Only Memory. The part of the computer's memory that is permanently recorded on a chip on the computer's motherboard. ROM contains the information needed to start and operate the com-puter and its peripherals; it cannot be altered; and it retains its fac-tory programmed information with or without power to the computer. The Atari PC2 has 32 kilobytes of ROM.

root directory The first or main directory on every disk. In MS-DOS, the root directory is indicated by a backslash (\).

scroll To display data that is longer than one screenful by rolling it up or down the screen.

sector A section of a track on a disk. On 5 1/4-disks, sectors are generally 512 bytes long. (See **track**.)

serial interface An industry-standard interface for connecting modems and other serial peripherals. A serial interface sends data one bit at a time. The serial interface on the back of the Atari PC2 is labeled "Serial."

software The programs and applications you run on your computer. (Compare to **hardware**.)

source disk The disk that information is written from during a DISKCOPY procedure. (Compare to **target disk**.)

startup disk See **boot disk**.

subdirectory A directory of files one or more levels down from the root directory. In the MS-DOS tree-structured filing system, a number of subdirec tories may be created as branches of the root and other directories. (See **root directory**.)

switch parameters Options that can be used with commands to control exactly how MS-DOS performs the command. A forward slash (/) always precedes each switch parameter included with a command.

syntax The form used to enter commands correctly. Syntax tells you what elements follow a particular command, whether they are required or optional, and what punctuation must be used.

system files The files COMMAND.COM, IO.SYS, and MSDOS.SYS, which MS-DOS must read from a boot disk in order to boot. IO.SYS and MSDOS.SYS, if present, do not appear in the disk directory listing because they are hidden files.

system prompt The prompt on the command line that indicates that MS-DOS is ready to accept a command. For example, A> is the default prompt for drive A.

tape drive A drive that uses magnetic tape cartridges for backing up disk data.

target disk The disk that information is written to during a DISKCOPY procedure. (Compare to **source disk**.)

track One of the patterns on a disk that contains the data written on the disk. Each track is made up of smaller sections called sectors. (See **sector**.)

tree structure The method MS-DOS uses for organizing directories. A tree-structured filing system has levels of directories that branch out from the root directory.

turbo mode The Atari PC2's fast (8.0 MHz) operating speed. In turbo mode your system saves and retrieves data more quickly than in standard PC mode. (Compare to **PC mode**.)

video display A video screen device used for viewing computer entries and responses.

warmstart Rebooting the computer by pressing **[Ctrl] [Alt] [Del]**. A warmstart only partially initializes the system. (Compare to **coldstart**.)

wildcard A question mark (?) or asterisk (*) character used in command syntax to specify the search criteria. ? matches one character; * matches any character to the end of the first name or extension.

working directory The directory currently accessed. To identify the working directory, enter CD at the MS-DOS prompt. Each drive on your system can have a different (independent) current directory.

write-protect To mechanically prevent a disk from being written to. To write-protect a 5 1/4-inch disk, place a write-protect tab over the notch. To write-protect a 3 1/2-inch disk, move the write-protect tab so you can see through the notch.

CUSTOMER SUPPORT

Atari Corporation welcomes inquiries about your Atari computer products. We also provide technical assistance. Write to **Customer Relations** at an address listed below.

Atari user groups also provide outstanding assistance. To receive a list of Atari user groups in your area, send a self-addressed, stamped envelope to an address below.

In the United States, write to:

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Customer Relations
P.O. Box 61657
Sunnyvale, CA 94088

In Canada, write to:

Atari (Canada) Corp.
90 Gough Road
Markham, Ontario
Canada L3R 5V5

In the United Kingdom, write to:

Atari Corp. (UK) Ltd.
P.O. Box 555
Slough
Berkshire SL2 5BZ

Please indicate **User Group List**, **Technical Assistance**, or the subject of your letter on the outside of the envelope.

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